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THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY,

AND

JOURNAL FOR RECORDING FACTS AND ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, MOLLUSKS,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
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BRITISH MUSEUM

THE

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A

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OF

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CONDUCTED BY

EDWARD NEWMAN, F.L.S., MEMB. IMP. L.-C. ACAD.

VOLUME THE TWENTY-SECOND.

WISDOM OF GOD IN CREATION.

LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.

M.DCCC.LXIV.

The little birds which sing so sweet
  Are like the angel's voice,
Which renders God His praises meet,
  And teach us to rejoice.

Gascoigne. 1556.

Come then, Dione, let us range the grove,
  The science of the feathered choirs explore,
Hear linnets argue, larks descant on love,
  And blame the gloom of solitude no more.

Shenstone.

BRITISH MUSEUM

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THE ZOOLOGIST

FOR 1864.

Natural-History Notes from Norway. By **George Norman**, Esq.

In the month of June last, in company with my friend Mr. N. F. Dobrée, I visited the Hardanger district of Norway, and during this and two previous visits to Norway I made a few notes on various subjects connected with Natural History. These notes I venture to send, thinking some of them may interest the readers of the 'Zoologist.'

Fieldfare (*Turdus pilaris*). It was on our road to the Vöring Foss, on the 20th of June, that the first fieldfares' nests were seen. My friend was very anxious to obtain eggs of this bird, and, although not now an egg-collector myself, I must confess my early bird-nesting propensities were strongly excited. With a walking-stick gun we had with us, I shot a young, fully-fledged bird, quite strong on the wing, but did not find eggs in any of the nests. Afterwards, in the extensive pine forests near Vossevangen, carpeted with Linnæa borealis, Trientalis europæa, Maianthemum bifolium and Pyrola uniflora, we found one nest with five eggs strongly incubated: this was perhaps ten feet from the ground, on the branch of a Scotch pine. The nest resembled that of the missel thrush, and the eggs those of the blackbird, only being uniformly larger. Some days afterwards, in driving towards Gudvangen, and further northward towards the Sogn Fjord, we met with whole colonies of these birds. The nests were situated at various distances from the ground, say from two to fifteen or twenty feet, and were found in pine, spruce and junipers. The greatest number of nests, however, were in the alder trees growing along the roadside, and in the dried-up branches of streams. Frequently we took twenty eggs or more in a day, selecting those which had the greatest variety in colour and marking. Some curious varieties were blotched with red, in the way of the eggs of the missel thrush. Near Sande we counted forty-three nests, along the roadside, in about the space of two English miles.

Brambling (*Fringilla montifringilla*). In driving through the woods near Vossevangen, the peculiar note of a bird caught my ear: the carriole was instantly stopped, and with a Voigtländer binocular I soon discovered whence it proceeded. A magnificent male brambling, with his glossy black head and orange breast, was sitting on the uppermost twig of a tall spruce fir. I watched the bird attentively for some minutes, and noticed when he uttered his harsh, grating note, closely resembling that of the greenfinch, that his back was suddenly elevated and the head jerked forward. We shot several specimens in full summer plumage, and managed to preserve them tolerably well, by pouring a few drops of creosote down the throat, and a like quantity into the vent. No one, having seen this bird in the winter garb only, can conceive the beauty of the shining blue-black head and neck during the summer months. Being anxious to obtain the nest and eggs of this bird, we searched diligently, but unfortunately were too late in the season. Several nests were found, seven in one day's stroll, near Sande. All contained either young ones, or these had already flown. The nests were beautiful structures, closely resembling those of the chaffinch, and were mostly built in alders and pines.

Sandpipers. It was near Sande that, while looking for a sandpiper's nest, I saw the old bird alight on the branch of an alder tree, and coolly watch my fruitless search. Sandpipers and water ouzels are very plentiful on all the brawling streams, but I suspect the nests are difficult to find.

In the woods near Vossevangen we saw many siskins, crossbills, pied flycatchers, nuthatches and a green woodpecker, which we secured with a rifle loaded with shot. This we had borrowed of the landlord at Vossevangen.

Ants. Throughout the wooded districts of Norway the gigantic nests of a formidable species of ant are met with. I have seen them, in many instances, as much as from four to five feet high, and composed externally of pine needles. The interior was not disturbed further than by thrusting a stick into the centre. The strong pungent smell of formic acid became then very perceptible: frequently I have been compelled to beat a hasty retreat from these pugnacious fellows.

Magpies. Throughout Norway the magpie is certainly the bird most frequently noticed: on the roadside their enormous nests, consisting of whole barrowsfull of sticks, were frequently noticed, projecting from beneath the meadow-covered roofs of the houses or from the wooden church steeples. No one in Norway thinks of shooting a magpie, consequently they are bold and familiar to a remarkable extent. As a rule, I believe the Norwegians treat all animals kindly, and I have often noticed the tameness of many birds which in this country are rarely approachable: this trait speaks much in favour ot the people.

Throughout the country, swallows, martins, swifts, wheatears, cuckoos, sparrows and chaffinches abounded, and once or twice the wryneck was seen and heard.

Northern Jay (*Garrulus infaustus*). In July, 1858, while fishing in the river Orkla, between Bjerkager and Drontheim, I saw a bird fly across the stream, which I recognized as the northern jay. In flying, its elongated body reminded me of the bolt-like flight of the longtailed tit.

Eider Ducks. Flocks of these birds were frequently seen in the Hardanger and Sogn Fjords, accompanied with puffins, auks, gannets and skuas. In the numerous Vands, or inland lochs, were almost invariably plenty of redthroated divers, and on the little islands colonies of common gulls (*Larus canus*) were nesting.

Herons were frequently seen. In sailing along the Hardanger Fjord I noticed with my glass the luxuriant vegetation on the stupendous cliffs, which rise 3000 to 4000 feet from the water. The trees were mostly pine, aspen, poplar, elm, ash, oak, birch and lime, all clothed in a luxuriant foliage of most exquisite green, indeed more so than we commonly see them at home. While examining these trees, I perceived a numerous colony of herons were nesting in the branches, safe enough from all interruption. Kestrels also seemed to have their nests in considerable numbers in the ledges of the rocks. Thinking this a good opportunity to examine the lime trees from an undoubted native habitat, on landing I procured a branch, and noticed that the leaves were unequal-sided to a very perceptible degree. I think it is Loudon who gives this as a good character to distinguish the American forms of lime from Tilia europæa. If I mistake not he gives the oblique cordate leaves as the peculiar mark of the American limes, and unjustly so, if my observations are verified. Here I may state that many trees, especially limes, are pollarded, and the branches and foliage stowed away for winter forage for cattle and horses.

Redshanks, &c. Stopped a day and night near Sande, northward of the Sogn Fjord, owing to the beautifully wooded nature of the country. Visited an extensive morass, thickly bespangled with the beautiful crimson flowers of Vaccinium oxycoccus. Here we disturbed whole flocks of redshanks, lapwings and other waders. Shot a fine male redshank, but failed in finding any nests, owing to the sponginess of the ground.

Museum at Bergen. We visited the Museum at Bergen, and were much interested with the very extensive collection of fishes preserved there. Specimens of the opah (*Lampris guttatus*) of large size were noticed, and one curious ribband-shaped fish of great length was shown us as a great rarity: this is called by the Norwegians the "herring king" (*Gymnetrus glesne*). This collection of fishes contains, I believe, many of extreme rarity, and all seem admirably preserved. The collection of antiquities belonging to the stone, bronze and iron ages, and of rune stones, is also very extensive, and would amply repay the visits of our archæologists. One or two cylindrical stones of remarkable, though unmistakeable form, had been dug up in the neighbourhood of the Sogn Fjord: probably these, like the Egyptian obelisks, were regarded as symbols of fecundity, and connected in some way with religious rites at a very remote period.

Willow Grouse. The Bergen Museum also afforded me an opportunity of examining a very good series of specimens of the willow grouse in all stages of plumage. In many specimens the only difference between this bird and the British red grouse was in the white wings of the former. I am now fully satisfied the two birds are identical. In continuation of this subject, I may mention that we met with a very intelligent Norwegian sportsman, who knew the willow grouse well, and who, moreover, had shot the red grouse in Scotland; he unhesitatingly stated his opinion that the two birds were the same. My friend Mr. Dobrée had the good fortune to have an egg of the willow grouse presented to him by this gentleman: this is in no way to be distinguished from the egg of the red grouse. This gentleman also informed me that Lord Garvegh, who was then in Norway, had a good series of eggs of the willow grouse. Perhaps his lordship would allow these to be examined, and by this means tend to clear up this disputed question. I know of no question of greater interest to the naturalists of this country, and I trust some competent ornithologist will take the subject in hand, and come to some decision as to whether the slight difference in plumage is of any specific value or not.

Ring Ouzel. Saw several specimens of the ring ouzel in the valley leading to the Bondhuus Glacier of the Folgefond, and indeed all over the country. Here I caught with my net specimens of an Hipparchia similar to, though I believe distinct from, the Arran Argus.

At the foot of the Morraine, in the water running from the Glacier, I obtained a good gathering of Diatomaceæ: the ice-worn stones were completely covered with a brown velvety layer.

After leaving the Glacier, we took a boat for Enæs, where we found very comfortable quarters for the night. After dinner, took a stroll in the pine forest with my net, but only took a few small moths, such as the following:—Ellopia fasciaria, Metrocampa margaritata, Boarmia repandata, Selenia illunaria, Cymatophora duplaria, Cabera pusaria, Bupalus piniarius, Lomaspilis marginata, Larentia multistrigaria and L. flavicinctata, Melanthia albicillata and M. ocellata, Camptogramma bilineata, Cidaria russata and C. montanata. Several large moths were seen flying about the pine tops: these I took to be pine lappets, but, as none were captured, I am not sure. Saw in the forest a brood of fully-fledged green woodpeckers.

Labrus cæruleus. While waiting for the steamer in the morning, on the little wooden pier, a large shoal of fishes, such as wrasse and codlings, were seen. Among these were several splendid fishes, which I had often before admired in the Bergen and Christiansand markets. They were almost a foot in length, the belly of a tawny orange colour, and the mouth somewhat constricted and snout-like in form; the back and sides brilliant in the extreme, being of an intense cobalt-blue and verditer-green colour, banded with black streaks. The Norwegians called it the bergylt (*Labrus cæruleus*), certainly a very different fish from the bergylt figured and described as a British fish in Couch's work. I had no other than trout tackle with me, still, as the fish seemed in a feeding humour, I took a gut-line from my fishing-book, and baited the hook with a piece of salted herring: instantly the bait was seized by the ravenous shoal of wrasse and codlings, and soon a goodly number were sprawling on the pier. The beautiful blue wrasse had no chance, on account of the smaller fry; so to baffle them, a piece of bait was attached to the hook longer than their mouths, when I had the satisfaction of securing a splendid bergylt. Is this fine fish a native of Britain?

Swallows and martins were frequently seen flying about the perpendicular cliffs in the fjords, and although we did not succeed in finding their nests, from their actions we were sure they were breeding there.

Gray, yellow and white wagtails abounded throughout the country. We were unfortunate in not succeeding in shooting one of the latter, for the sake of comparing afterwards with our British bird.

Redwings (*Turdus iliacus*). Frequently we heard the song of the redwing, but it was evidently too late to secure eggs of this species. Several times nests were found closely resembling those of the song thrush, with particles of blue eggs, undistinguishable from those of the thrush: these were, in all probability, nests of the redwing, and were placed in similar situations to those chosen by the common thrush. What makes this the more probable is that the song thrush is a very rare bird so far north.

Ferns in great variety were noticed all over the country. In no part of Great Britain or in Germany have I seen the beautiful Polypodium Dryopteris so plentiful and fine; fronds of twelve and fifteen inches were frequently noticed. Lastrea Filix-mas, L. Oreopteris, Pteris aquilina, Athyrium Filix-fœmina, Asplenium septentrionale, Cystopteris fragilis, Polypodium vulgare and P. Phegopteris, were also seen in profusion. Near the Odde Glacier I noticed, where the snow had only disappeared a few days before, a luxuriant growth of Polystichum Lonchitis. In the low grounds by the road-sides we frequently passed whole acres of Struthiopteris germanica, with fronds three and four feet high. Osmunda regalis and Cryptogramma crispa were seen; and in the crevices of the rocks luxuriant masses of Woodsia hyperborea, Asplenium Trichomanes and A. viride. On one occasion, in driving along the road I fancied I saw Asplenium fontanum. In the neighbourhood of Drontheim, and throughout the Guldbrandsdal, is a large aconite in great profusion: the plant seemed to me to be much larger, with more deeply cut leaves, and a more lurid blue flower than A. Napellus. The beautiful Arnica montana abounds in all the meadows; Anchusa tinctoria, Impatiens Noli-me-tangere, and other plants, unknown to me, were frequently seen on the road-side. Norway is indeed a paradise for the botanist.

Doritis Apollo. During two previous trips to Norway a few weeks later in the year I frequently saw in one day's drive twenty or more splendid specimens of Doritis Apollo in the meadows by the road side. I had no net with me, but often jumped from the carriole and secured specimens by knocking them down with my hat. In flight they resembled nothing so much as animated pieces of tissue paper. Argynnis Lathonia is not uncommonly seen alighting on the sandy ground. I noticed also Limenitis Sybilla, Vanessa Atalanta, Satyrus Semele, Gonepteryx Rhamni and other butterflies, as well as Macroglossa Stellatarum.

Golden Plover and Godwits are found in great numbers on the Dovrefjelds. I first noticed the former birds with black breasts near Hjerkin. Engaged in procuring specimens of some beautiful alpines, such as Salix lanata, S. reticulata, Saxifraga aizoides, S. oppositifolia, Oxyria reniformis, Lychnis acaulis, &c., I frequently flushed these birds from the rocks on the Fjeld, where no doubt they were breeding. No nests, however, were found.

Lemmings. Near the Vöring Foss I caught a lemming which had run for shelter beneath a rock on the Fjeld. Frequently I have seen eight or ten drowned near the sides of the Vands or upland lakes, as though they had attempted swimming over and been met with a storm. In appearance they reminded me of small guinea pigs, being white, tawny and black in colour. Some seasons they abound in immense quantities all over the country, while for seasons together none will be seen. This curious circumstance requires explaining.

Fucus vesciculosus. A circumstance frequently surprised me when searching for Diatoms among the Algæ, to see the common "bladder wrack" (*Fucus vesciculosus*) growing in profusion on the rocks near the head of the various Fjords, where the water was so fresh that in using it for drinking a very slight saline taste only was perceptible. A complete black coating of common mussels was attached to the rocks, where the water was similarly free from salt.

Near the Folgefond Glacier we noticed several beautiful Alpines, Veronica alpina, V. officinalis, *var.* rubra, Saxifraga nivalis, Menziesia cærulea, Bartsia alpina; and afterwards, in going over the Folgefond snow-field, from Odde to Overhuus, for some fifteen or twenty miles nothing but unsullied snow was met with. On reaching the crest of the Fond, for miles nothing but a dreary snow waste was visible. This utter desolation was the more remarkable from the fact that an hour before I had been plodding up the steep side of the Fjell with a nearly tropical temperature, and through a region of luxuriant vegetation.

Peregrine Falcons. These birds were frequently seen. Once, indeed, on sailing up one of the Fjords a young heron was chased by a peregrine. The poor heron tried hard to dodge the falcon, and several times attempted to conceal himself in the crevices of the cliff. Just where the boat was passing beneath, he lost his footing, tried hard to regain it by clawing the rock, and finally came sprawling into the water within a few yards of the boat. The peregrine all the while sat on a ledge of the rock waiting until we passed, when no doubt he would renew the chase.

Hippobosca equina. In driving through the country near Mandal, my horse was much plagued with a species of Hippobosca, whose manner of running over the horse's back amused me greatly. Wishing to relieve the poor animal I frequently tried to drive the flies off by touching them with the point of my whip. Instead, however, of flying away they would run along sideways, like a crab, taking no further notice of the whip.

Here my notes must end. I trust the perusal of these cursory jottings may induce other readers of the 'Zoologist' to give us occasionally an extract or two from their note-books relating to Natural-History experiences on the Continent.

GEORGE NORMAN.

Hull, November 23, 1863.

Supposed Capture of the Old English Rat near Beverley.—Two days ago my friend Mr. John Stephenson, of the Hull Bridge House, Beverley, brought to Mr. Richardson, birdstuffer, &c., of this town, a very peculiar looking rat. I saw it, and believe it to be a very first-rate old specimen of this now scarce animal. It had been killed by a dog in a barge lying on the River Hull, close to the Hull Bridge. It was a female. In colour it was very dark, many shades darker than the ordinary rat, and I should describe it as a grayish black above, lighter on the sides and belly. Its ears were unusually large, and its whiskers very black. The tail was unusually long in proportion to the body, and almost black in colour. The fore leg appeared to me unusually short, but as I have not specially observed quadrupeds, my own favourite study being that of Ornithology, I may be mistaken in this last point. Unfortunately the animal had just been skinned when I first saw it, so that I could not ascertain the precise weight. Its measurements were as follows. Total length from tip of nose to tip of tail, 17 inches. Length of tail, 9 inches. Length of fore-leg from toes to shoulder, 1¾ inch.—*W. W. Boulton; Beverley, October* 23, 1863.

The Otter in Salt Water.—Having seen but little of the otter in England, I am much interested by a statement on good authority, which lately appeared in these pages (Zool. 8801), that it rarely frequents salt water, for, oddly enough, here it is the exception to find one in fresh. Upon nearly all of our rocky coasts there are deep caves and fissures inhabited by these animals, most of which are some miles distant even from the mouth of a burn of any size. The Shetlanders believe that the "sea otter" is quite a distinct species from the smaller one which occurs in the lochs, but this, it need scarcely be said, is an error,—the fact is that those which appear in the lochs and burns are usually killed before they arrive at their full growth, while those which take up their abode upon the coast, where the inaccessibility of their retreats secures them from persecution, sometimes attain an enormous size. Dr. Edmondston has seen a skin six feet in length, "dealer's measure" (*i. e.*, exclusive of two-thirds of the tail), and I myself have seen specimens taken in Yell and North Mavine, measuring very little less.—*Henry L. Saxby; Baltasound, Shetland, November* 11, 1863.

The Grand Migration of Seals.—Few things are better calculated to strike the observer of nature than the power of various animals to carry out extensive and sustained exertions in the course of their periodical and oft-repeated migrations—extensive, inasmuch as some of these are continued over thousands of miles, and sustained continuously during many days of great exertions. In most instances we are left to conjecture for much of our information on this subject. It is true some of the bird tribe are seen preparing for their journey. Swallows congregate in great numbers, and suddenly disappear, but precisely how or when they go is but vaguely ascertained. We learn the arrival of our winter visitors chiefly by their presence, and therefore infer that the passage has been performed during the night. That animal, however, regarding whose proceedings I am about to say a few words,—the seal,—affords ample opportunities for watching his whole career. Requiring, as he does, the aid of all the elements, save fire, for the comfort and the continuation of his existence, his motions are not easily hidden. Heavy and awkward as his appearance is when at rest on the land, in the water his actions emphatically refute this charge; activity and perseverance mark all his motions, to which qualities we may justly add cunning and sagacity of no ordinary character. Independently of his constant motion in pursuit of his prey, the migrations of the seal are most extensive. During the summer and autumn numbers of these creatures are met with, scattered in small parties, in all parts of the Northern Ocean visited by the whalers and other fishermen, where they remain until the severity of the arctic winter warns them to retreat southward. Mariners who have been beset amongst the ice, or for other reasons have passed the winter in those hyperborean seas, remark that few seals are met with during the winter, and some of them chronicle the time at which they first appeared on their return. Our information with regard to their general motions is not limited to these somewhat vague records. The habits of the genus (for it consists of many species) are so visible that we must conclude the scattered seals met with during the dark winter of the Pole are only stragglers left behind when the main body moved southward. As the severity of the weather increases it is evident that, like the swallows, an instinctive movement must commence, communicated to and understood by the whole family, like a masonic sign, prompting a general assembly of the clans at some long-frequented, well-known spot of their wide domain, where, it is to be supposed, they enjoy their sport until the gathering is completed. At length the frost commences, and the army is set in motion. This proceeding is keenly looked forward to and watched by the inhabitants of the coast, whose interest is much involved in their passing visit, and who fail not to levy tribute in kind. A fisherman, posted as sentinel on some headland commanding an extensive sea-view, communicates to the hamlet the first indication of the approaching host, the vanguard of which invariably consists of small detachments of from half a dozen to a score of seals; such parties continue to pass at intervals, gradually increasing in frequency and numbers during the first two or three days of the exodus, by the end of which time they are seen in companies of one or more hundreds. The main body is now at hand, and during the greater part of the next two days one continuous, uncountable crowd is constantly in sight. The whole procession coasts along at no great distance from the shore, presenting to an eye-witness a most extraordinary scene. In all quarters, as far as the eye can carry, nothing is visible but seals—the sea seems paved with their heads. Some idea may be formed of the vast multitude when we consider the time occupied in passing, and the rate at which the animals are hurried along by the ceaseless, rapid stream which forms the highway of their long though expeditious voyage. The rear is brought up by small parties, such as formed the leading detachments. In one short week the whole host passes, consisting of many hundreds of thousands. The current of which these sagacious voyagers take advantage is the well-known polar current which proved so inimical to the success of our North-West Passage discoverers, and which sets through Hudson's Bay, and sweeps the coast of Labrador in a south-east direction; running at all seasons at the rate of several knots an hour, hurling with it, during the winter and spring, quantities of ponderous field-ice, together with numerous icebergs of various size, and frequently of most grotesque shapes. By it the seals continue their passage steadily on in one unbroken course until the island of Belleisle presents an obstacle—situated in the entrance of the Straits of Belleisle, into which a branch of the current sets, carrying with it a portion of the force towards the Gulf of St. Lawrence. The main body continue onward until they reach the Gulf Stream, on the banks of Newfoundland. Here they arrive about the end of December or early in January, and halt for a time in the more still and warmer waters of that locality, resting until the time for bringing forth their young arrives; nor is the rest of long duration. About the end of January it becomes necessary to turn northward. During the southerly migration no ice encumbered the way—all circumstances were favourable; but the now-projected movement is undertaken under many impediments: the animals, heavy with young, must stem the strong current; the bed on which their snow-white cubs are to be laid is solid ice. Onward they struggle until they fall in with the immense continent of this material—one part of which is formed on the shores, and a much larger portion hurried forward by the polar stream. This now covers the identical sea along which they so recently passed, and is to be their home until the duties of the nursery are performed, and their sleek progeny are strong enough to accompany the herd. The detachment which we left on their way up the Straits of Belleisle met their own difficulties: the fishermen waylay them here most assiduously —net after net awaits the toiling emigrants, which are turned to good purpose. Several thousands are taken at the many stations planted on all parts of the shore from Cape Charles to the Gulf of St. Lawrence. In the Gulf many of them pass the winter and bring forth on the ice formed near the shores of this sea; a few of the young are taken by the inhabitants of the Magdalene and other islands; but a considerable section of the original stock circumnavigate Newfoundland, and join the great body on the banks. Those which winter in the Gulf of St. Lawrence quit their quarters in that sea about the end of June, and on their way down the Straits of Belleisle reward the watchful fishermen with a few additional thousands of their much-prized carcases. These are now accompanied by their young, all but as round and bulky as their parents. After clearing the Straits little more is seen of them. It is believed that, in order to avoid the adverse current, they make their passage north to their old summer haunts at a much greater distance from the land.—*J. C. Steavenson, in the 'Field' of November* 28, 1863.

Porpoises at the Zoological Gardens.—Two unsuccessful attempts have been made to introduce living porpoises at the Zoological Gardens. There are a few leading conditions of porpoise life that seem to have been utterly disregarded: *first*, seeing,—and to conquer this propensity the eyes of the poor creatures had been poked out, not I believe by Zoological authority, but by the captors; *secondly*, residence in a medium of salt water; this was denied them, and they were supplied only with fresh. Now we all know that to plunge a marine animal in fresh water is the most certain mode of killing it, and to gouge out its eyes is the most certain way to starve it. I only saw one of these creatures for about an hour before it died. It appeared to be rolling over and over in agony.—*Edward Newman.*

The Whitetailed Eagle at Shoreham.—I have a beautiful specimen of the white-tailed eagle, which was brought to me on Friday, November 13th; it had been killed the day before at Shoreham, where it was first observed flying over the town, and was marked down near the edge of the water. A friend of mine having heard of it, immediately went in pursuit, but before he reached the spot it had been disturbed by a coast-guardsman: it then flew about half a mile, followed by a number of rooks and gulls, anxious to drive it from the neighbourhood. Before my friend came up with it, it again rose, and flew a long distance on towards Worthing: with the greatest haste, he again made towards it, and, creeping behind a ridge of the beach, got within forty-three yards of it; on his first looking over, it was feeding on a gull, but immediately the bird saw him, it rose with great difficulty, when he shot it, breaking the right wing, but even after this it was a very formidable creature to secure. The bird proves to be a female, measuring in length 3 feet 4 inches, and in extent of wings 7 feet 11 inches. The plumage is very fine, having, I suppose, completed its moulting; the tail is about three parts white. It is very remarkable that the wing was broken with No. 6 shot.—*H. Pratt; 44, Ship Street, Brighton.*

Osprey near Preston.—I purchased a fine osprey, shot close to this town, on our marsh: it was assailed by a number of crows, and fell a victim to another enemy whilst combating its courageous foes. It is quite astonishing to see with what daring the crows attack the hawk tribe: I have seen them several times this summer beat off hawks when they have ventured near their nests.—*J. B. Hodgkinson.*

A Jerfalcon shot in the South of Scotland.—Mr. W. Scott, gamekeeper to his grace the Duke of Buccleugh, has shot, at Tandlaw Moss, a fine specimen of the jerfalcon, which measures 49 inches between the tips of the wings and 20 inches from the point of the beak to the tip of the tail. When shot it fell into a loch, and, wounded as it was, darted so furiously at the dog that he could not bring the bird out, and Mr. Scott had to wade for it himself. He intends presenting it to the Museum; and when placed there it will complete the collection of the falcon tribe, as the other species are already represented.—*Hawick Advertiser.*

Singular Capture of a Hawk.—A sparrow feeding at the bottom of a newly-made grave, in the cemetery in the parish of Deptford, attracted the attention of a hawk soaring above, who descended from its dizzy height "into the limits of the narrow grave." The narrowness of "the last mortal resting place" prevented the hawk from again rising, and it was easily caught by Fletcher, the gravedigger. The bird is now in the possession of Mr. Hurlstone, of Ladywell, Lewisham.—'*Field.*'

Honey Buzzard at Goodwood.—In the first week of the present month a large bird was seen on Halnaker Common, near Goodwood, by one of the Duke of Richmond's gamekeepers, in the act of scratching out a wasp's nest. The man, being without a gun, allowed the bird to escape, but, on returning to the place with a gun, found it enjoying its meal of wasps, and shot it. From the circumstance of the bird feeding on the contents of a wasp's nest, I conclude there is no doubt of its being a honey buzzard.—*W. Jeffrey, jun.; Ratham, Chichester, November* 27, 1863.

Barn Owl's Nest with Eight Eggs.—I do not know whether it is generally known that the barn owl lays eight eggs; I certainly had no idea myself, having consulted no works on the subject. During my stay at Witherslick I took a nest with eight eggs, and then again the old bird laid six more. I much wanted the eggs, and had very much difficulty in getting them, owing to the great store set upon the barn owl for its services in thinning the mice in the barns. It was the only instance in which the natives took a favourable view of the idea of preserving any birds except game: as to small birds, they wished me to kill all but goldfinches. I tried to convince them of the utility of the great bulk of the feathered tribe, but it would not avail: the poor jay is in very bad favour, owing to its depredations among the peas: there are traps in all the gardens for them, which destroy more than ever the gun does.—*J. B. Hodgkinson; Preston, Lancashire.*

The Shorteared Owl perching.—Last winter, when out shooting on a marsh in Cumberland where heath was abundant, a shorteared owl (*Strix brachyotus*) rose about fifty yards in advance of me. I fired a long shot at it, but could not be certain whether the bird was struck or not: however, I marked it down again about four hundred yards off, and cautiously approached the place: when within about a hundred yards I saw the head of the bird peering out from among the heath, but on going a few paces nearer it took to flight. This was repeated two or three times, when the bird, instead of settling on the ground, perched on a stick which projected from a fence. Here I was again foiled in attempting to get a shot, but continued to follow it for half an hour, at the end of which time the bird perched on a rail in a fence, and, approaching under cover of some bushes, a second shot brought it down. It is by no means a rare bird on some of the Cumberland marshes, but, though I have frequently met with it, the above is the only instance of its perching that I am aware of. The bird is now in my collection.—*Joseph J. Armistead; Queenwood College, Stockbridge, Hants; November* 20, 1863.

Large Flocks of Fieldfares near Moundsmere.—Last month the fieldfares appeared in this neighbourhood in unusually large quantities. I first observed two or three on the 6th of November, but on the 11th I observed large flocks near Bradley: they feed on Preston Down, and keep a sentinel perched on the topmost bough of some tree hard by, which, on the approach of danger, soon gives notice to the whole flock; they immediately fly up, as if to ascertain the quarter in which the threatened danger lies, and, as soon as they have discovered this, fly off generally in as near as possible the opposite direction. I saw a small fir plantation, not far from Bradley, literally swarming with these birds, which, however, were too wary to allow me to get within gunshot of them. The fieldfares now appear to resort more to the woods, as I have observed very large flocks, at all times in the day, perching on the trees in Inham's Coppice. Those about Bradley appear to roost in the woods near that village, as I have often of an evening seen them flying off towards the woods in that direction. When going to roost they generally fly very high, and only once have I seen them, when going to their roosting places, flying low enough to be within gun-shot; this was only a few days after their arrival, and they flew hardly twenty yards from the ground in a tremendous flock: I fired and killed one, which was very plump and fat. —*Anthony S. Bradby; Moundsmere, Hants, December* 3, 1863.

Late Blackbird's Nest.—While out shooting, a few days ago, I was startled by a very peculiar noise issuing from the adjoining hedge. I immediately proceeded to the place, and to my astonishment saw a nest of young blackbirds (four in number), half startled out of their wits; and no wonder, for a snake was at the foot of the bush. Is not this altogether an uncommon occurrence, for two reasons: *first*, I think it quite unprecedented for a blackbird to build its nest at this time of the year; *secondly*, I think a snake never appears so late, unless the weather is very warm indeed, which, to a certain degree, it was. I have heard of blackbirds building their nest in September, but never so late as the second week in November.—*Arthur Freeland, in the 'Field.'*

Ring Ouzel in Yorkshire.—The ring ouzel (*Turdus torquatus*) is, I believe, very plentiful in some localities: here, however, it is only an occasional visitant; indeed, I have only seen four specimens during the last four years, actually shot in the neighbourhood. On the 10th of October a nice female specimen was shot on Swinemoor, one of the common pastures belonging to the town of Beverley, and in its immediate vicinity: the bird was killed by Mr. W. Boyes, of this place, and given to me by himself. On the 12th of October another female specimen of the ring ouzel was sent to me from Malton, near which town it had been shot: it came to me in the flesh, and had been recently killed. The man who shot it did not know what it was, and supposed it to be a variety of the common blackbird (*Turdus merula*): I presume, therefore, that it is not common about Malton, which is distant from Beverley about twenty-five miles. —*W. W. Boulton; Beverley, November* 4, 1863.

Eggs of Grasshopper Warbler.—I received, in June, 1862, a nest of three eggs of the grasshopper warbler (*Sylvia locustella*), quite fresh laid: the person who took them informed me he found them near Surlingham, Norfolk.—*T. E. Gunn; Surrey Mews, Norwich, November* 20, 1863.

Scarcity of Summer Migrants.—Might not the scarcity of our smaller summer migrants this year, as complained of by various correspondents, such, for example, as Mr. Boulton (Zool. 8726), be satisfactorily accounted for by the fact of the unusual scanty existence of insect-life, their principal subsistence in this their transitory home? I may add, my experience quite confirms that adduced by Mr. Boulton. Even the merry voice of the charming little sedge warbler met the ear less frequently this year than is its wont.—*S. P. Saville; Dover House, Cambridge, October* 3, 1863.

Scarcity of Singing Birds.—The scarcity of singing birds has been already noticed by some of the contributors to the 'Zoologist,' and I beg to append another reason I intended to have named, which, in my opinion, tends greatly to diminish the number of our favourite choristers of the woods. I allude to the extraordinary mania in schoolboys, and indeed in "children of a larger growth," to make collections of the eggs of small birds of all descriptions. Next to the collection of postage-stamps, the "Ovomania" (a vocable coined or *hatched* for the occasion) stands predominant; and no wonder that we see complaints made of the diminished numbers of our charming native songsters, as well as of garden warblers, and indeed of all the migratory birds.—*H. W. Newman; Hillside, Cheltenham.*

Varieties of the Corn Crake, Yellow Bunting, Sparrow, Linnet, Blackbird and Common Bunting.—During last year I added the following varieties to my collection. Corn Crake: upper parts rufous, fringe of the feathers gray; wing-coverts and quills bright ferruginous, the former barred with white; under parts white, slightly rufous on the breast. Yellow Bunting: upper parts deep cream-colour; tail and wing-quills white. Sparrow: cream-colour. Linnet: head entirely white, rest white and brown. Blackbird: pied. Common Bunting: head and upper parts white.—*H. Blake-Knox; Bartragh, Dalkey, Co. Dublin, November* 4, 1863.

Notes about Robins.—I have been much interested in and fully agree with Mr. Ranson's remarks (Zool. 8843) about the robin, and may record as very singular that every robin we have given to our tame fox has always made him sick; he was sure to vomit it after having swallowed it. He is the best animal to kill rats and mice I ever had; in fact he will leave any sort of food for a rat. Query, Where are the hen robins during the winter? are they in the woods? I only see the male birds during that season in the town, and only one within a certain radius; for should another encroach upon his beat, there is sure to be a fight until one of them retires. What is the reason they never sing in confinement? I have had one for some years in my aviary, but he has never been heard to sing unless a wild bird should visit him, when he will utter a few notes of defiance, and then they begin to fight one another through the wires. The fox as well as the cat will not eat the shrew mouse.—*G. S. Wintle; Gloucester, December* 3, 1863.

Query about the Robin.—Though I have no wish to prolong the discussion on the habits or the supposed scarcity of the robin, I have one or two remarks to offer in reply to Mr. Ranson's observations on my note of May last. He says (Zool. 8843), "The Captain's communication reads as if I had vouched for the truth of the popular notion, which I carefully avoided doing," but by a reference to my note at Zool. 8523 it will be found, that in commenting on Mr. Whatt's paper I said, "He does not answer Mr. Ranson's query, 'Are there any grounds for it?'" clearly showing that I did not consider Mr. Ranson "had vouched for the truth of the popular notion," though it would now appear that he is somewhat credulous, for he remarks, "neither has he convinced me that the popular notion is incorrect." It was hardly to be expected that I should, considering the innate love of the marvellous more or less common to all. He then remarks, "The mistake into which the writer has fallen is one that is very common, namely, that the robin leaves the gardens and retires from the villages to build its nest. My experience goes to prove that the robin rarely withdraws from its winter haunts to build its nest, and it will not leave the garden if it can find a convenient place to build in. This year I have had two nests in my garden, both in holes in the wall." That I am not mistaken as to the robin's habits I have only to refer your correspondent to 'Macgillivray' (vol. ii. p. 267), where he says, "Although most of the redbreasts retire from the vicinity of human habitations in summer, and betake themselves to the woods and hedges, yet some go to no great distance." This tallies with my own observations. Formerly, when Ventnor was but a mere village, I have had two and three robin's nests in the garden; of late years none, though during the autumn and winter the redbreast is as numerous as ever. Seemingly they differ somewhat in habits in the north; possibly for want of green lanes, mossy banks, hedgerows and ivy-grown walls, wherein to build their nests; and Mr. Ranson's remarks as to the odd holes and places to which they resort favours this opinion; for he speaks of these "slits and holes" as convenient places. But in his endeavour to show that robins do not quit the vicinity of towns and villages to breed, he proves the species to be more numerous in the north than Mr. Whatt's remarks would have led one to suppose. Mr. Ranson observes, "This year I have had two nests in my garden," and says he has occasionally found three. Let us see then what the latter number would give. Three pairs of old birds with two broods each, would make about thirty-six, allowing for an addled egg or two, but nothing for casualties, seeing that the robin is as distasteful to the northern breed of cats as is the shrew. (By the bye, I should like to exchange cats with some northerner, mine having a peculiar fancy—a kind of depraved French taste—for the robin). At this rate, as there can be few gardens without such "convenient places," redbreasts should be numerous enough. When I remarked that it was "so unnatural, too, that the young should destroy the parent birds," it was not intended in the restricted sense in which it has been taken. Again, who is there that does not know that the robin is instinctively pugnacious? The "gentleman" referred to must be an uncommon old gentleman if he made the discovery. In the fight instanced there is one thing wanting—proof of its being the attack of a young bird on an old one; besides, the result appears to have been that both birds perished; however, it is another instance of the well-known pugnacity of the species. There are other passages that might be remarked on, but I shall refer to but one more; however it is one that convinces me that I am not the only person "but little acquainted with the habits of the robin." It is this: "I believe it suffers less from cold and hunger than any of our small birds." Than the house sparrow? Never do I remember seeing one that had perished from cold, but dead robins I have found frequently; nor do I know of any bird that suffers more in severe frosty weaather, unless it be the thrush; but the latter has not the "cottage kitchen to take refuge in."—*H. Hadfield; Ventnor, Isle of Wight, December* 4, 1863.

The Blackcap feeding on the Berries of the Mountain Ash.—A pair of these birds were obtained in 1860 feeding on the berries of the mountain ash, which they swallowed whole with perfect ease. The male was shot on the 16th of October, and the female on the 28th of the same month. In October of the following year (1861) a few specimens were again observed, and last year a male remained with us till the 8th of November. On the 27th of September of the present year a female made her appearance, and in a day or two was joined by a male and a second female; but owing to some workmen being employed near the tree which supplied them with food, they soon disappeared. This, then, establishes the fact, before doubted, that the blackcap warbler is a regular summer visitant in Caithness, and that even in this northern climate it prolongs its stay until the winter months. The statement as to its feeding upon rowans was also doubted, and I am not aware the fact has been recorded in any one of the numerous works devoted to British Ornithology. It is, however, indisputable; and since the question was first mooted I have observed that the robin, a bird of the same or even less size, occasionally treats himself to a diet of rowans, despatching them, too, with as much ease as the blackcap, or as the thrush or blackbird.—*H. Osborne, jun., Wick, November* 21, 1863.

[I have been favoured with a sight of the pair first alluded to by the excellent observer, whose record I extract from the 'Field' newspaper, and they were certainly blackcaps, male and female.—*Edward Newman*].

Great Arrival of Goldencrested Regulus at Wick.—During the prevalence of a severe gale from south-east, which commenced on the 9th of October, and lasted some days, extraordinary numbers of that beautiful little bird, the goldencrested regulus, appeared suddenly at various places on the east coast of Caithness, forced apparently in this direction, from their usual line of flight while migrating, by the fury of the tempest. The tiny creatures were much fatigued on their first appearance, and great numbers were picked up in an exhausted or dying condition. On the evening of Sunday, October 11th, numerous specimens were captured by boys in the streets of Wick, the buffetings of the gale rendering them quite helpless; and on the same day they were also obtained among the furze bushes at Noss Head, so that the flight must have been of very considerable magnitude. For some days after their arrival there was scarcely a garden in or near Wick and Pulteneytown left unvisited by a company of goldcrests, who flitted over every bush and tree in search of insect food. With the return of fair weather, however, the flock quickly disappeared. There can be little doubt that this flock was brought over here under circumstances similar to that which drove the immense flight on the east coast of Northumberland in 1822, as recorded by Mr. Selby, although, as mentioned by that author, the wind was from the north-east at the time; while, as stated above, the gale that forced them on this coast was from the south-east. The goldcrest, however, appears to reside with us during the winter, and in February last I observed them in considerable numbers in the woods and hedges near Forse House, —*H. Osborne, jun., in the* '*Field.*'

[The following is the notice by Mr. Selby, to which Mr. Osborne refers:—"On the 24th and 25th of October, 1822, after a very severe gale, with thick fog, from the north-east (but veering, towards its conclusion, to the east and south of east), thousands of these birds were seen to arrive upon the sea-shore and sand-banks of the Northumbrian coast; many of these so fatigued by the length of their flight, or perhaps by the unfavourable shift of wind, as to be unable to rise again from the ground, and great numbers were in consequence caught or destroyed. This flight must have been immense in quantity, as its extent was traced through the whole length of the coasts of Northumberland and Durham. There appears little doubt of this having been a migration from the more northern provinces of Europe (probably furnished by the pine forests of Norway, Sweden, &c.), from the circumstance of its arrival being simultaneous with that of large flights of the woodcock, fieldfare and redwing. Although I had never before witnessed the actual arrival of the goldcrested regulus, I had long felt convinced, from the great and sudden increase of the species during the autumnal and hyemal months, that our indigenous birds must be augmented by a body of strangers making these shores their winter's resort."—*E. N.*]

Waxwings near Hull.—Several waxwings have been shot near Hull within the last few days.—*N .F. Dobrée; Hull, November* 12, 1863.

Waxwings in Norfolk.—There appears every probability of these beautiful, but most irregular winter visitants being plentiful during the next few months: already I have seen eight specimens, shot in different parts of the county between the 10th and 14th. They have been very scarce with us since their extraordinary visitation in the winter of 1849-50.—*H. Stevenson; Norwich, November* 14, 1863.

Waxwing at Wick.—On Thursday, the 12th inst., I was informed that a rare and beautiful bird had been seen among some trees near Rosebank House, Wick, which, from the description, I judged to be the Bohemian waxwing. Not long after I stood beneath the tree, on the top branches of which the stranger sat, trimming himself, and occasionally ruffling his plumes, and raising and lowering his ample crest. As I supposed, the bird proved to be a specimen of the Bohemian waxwing: it was exceedingly tame and fearless, and did not appear in the least frightened by the many people moving about in its vicinity, or the vehicles which noisily rattled past, the tree in which it sat being quite close to the road. It is rather curious that the only other specimen of the waxwing found in this county was obtained some years ago in the same grounds; it is now in Dr. Sinclair's collection. I did not disturb the bird on Thursday, as I fully expected it would soon pay our own place a visit, the temptation held out being a mountain-ash, with an abundant crop of rowans; and directions were given that the tree should be closely watched for a day or two. On Friday, as anticipated, the waxwing made its appearance, breakfasted heartily off the rowans, and betook itself to the branches of a neighbouring elm, where it rested during the day, only occasionally leaving the prominent position selected for an attack upon the rowans. It was so far fortunate that the presence of the workmen near the tree in question earlier in the season had a deterring effect on the host of thrushes, blackbirds, &c., which every previous year had robbed it of its fruit, as the waxwing had thus plenty and to spare of its favourite food. Pleased with its quarters it remained during the following

Saturday and Sunday, affording by its lengthened stay and familiar habits ample opportunities for observation. It was in perfect plumage, and afforded much pleasure to those who saw it during its stay. So fearless was it that, while selecting the cluster on which to operate, and picking off the berries, it appeared perfectly unconcerned at an approach to within a few feet of the tree; where also, as long as it remained, two or three men were employed in dressing slates for roofing purposes. Judging from what I saw of this specimen, I should say the waxwing is rather an indolent bird. During these three days it seldom left its perch, and then only, so far as could be observed, to visit the rowan tree for food. When not thus engaged it was continually preening and arranging its rich silky plumage; but it is possible that the apparent indolence of the bird in this instance was induced by the fatigue it had endured in its long journey hence from some Norwegian forest. Whatever may be the character of the bird while with its fellows, this specimen certainly belied its appellation of "chatterer," as the only sound it was heard to emit was a low whistle, and even this but seldom. On its first appearance, the sparrows—as is usual with these quarrelsome gentry when the presence of a stranger among them is detected —"mobbed" it, and regularly followed it in its flight from one tree to another; but the waxwing showing on all occasions a bold front to the enemy, they soon learned to keep at a respectful distance, and ceased to persecute it. On one occasion a sparrow, rather perter than its fellows, advanced and made some threatening demonstration, but the waxwing darted so suddenly upon him, and used his bill to such excellent purpose that his would-be tormentor showed no disposition to renew the combat. On the morning of the 16th the waxwing disappeared, and has not since returned.—*H. Osborne, jun.; Wick, November* 21, 1863.—'*Field.*'

Waxwing in Aberdeenshire.—Last week I had two very fine male specimens of the waxwing sent me from Aberdeenshire for preservation.—*W. M'Leay; Inverness, December* 7, 1863.

The Bohemian Waxwing on the West Coast of Argyllshire.—A very fine specimen of the above species in full plumage was given to me on the 25th ult. It was found lying dead on the road between East Tarbert and West Tarbert, by Mr. Wotherspoon, of Gigha. It was quite fresh when I received it, so that it had lain a very short time. There was no wound upon it. In the 'Zoologist' of 1861 Mr. Thomas Edward, of Banff, reports a specimen having been shot at that time, and mentions that one was procured in the same locality eleven years before, which came down a chimney. I do not know of the occurrence of other specimens in Scotland.—*Thomas Chapman; Glasgow, December* 5, 1863.

Notes on the Occurrence, Capture and Dissection of the Waxwing at Beverley.—It is just about twelve or fifteen years since this exquisite and rare bird visited the neighbourhood of Beverley. Several were shot during the winter of their last occurrence, one of which, a young female, I obtained; and I have seen others that had been shot about the same time. On the 4th of November, 1863, the following curious circumstance was detailed to me by a fellow townsman, whose word I can rely upon, *viz.*, Mr. Timothy Lundie, of Beverley, an old and respected inhabitant. He states that on going to his field on the morning of the 4th inst., he heard a most unusual noise, which arrested his attention, but the source of which he failed to detect in the first instance. The noise continuing, Lundie called the attention of Mr. Coxworth, of Woodmansey (who was passing at the time), to it, and at first they both attributed it to an unusual disturbance of the telegraph wires, which pass close to his field.

Coxworth, however, soon pointed out to Lundie a large flock of birds which had alighted on a hawthorn fence, and from which they found the noise originated. Seeing that these birds were unusual in appearance as in voice, both the men advanced sufficiently near to detect the species. They turned out to be a large flock of the Bohemian waxwing or waxwing chatterer (*Bombycilla garrula*), numbering at the least, on a rough computation, several dozens. On the two preceding days this locality was visited by a severe storm, to which circumstance Lundie attributed the presence of this flock of Bohemian waxwings in the immediate vicinity of the town of Beverley. I have no hesitation in accepting this story as correct, inasmuch as I have known the narrator all my life, and have reason to consider him an honest and respectable man; moreover, he has been more or less an observer of nature for many years, and a birdstuffer also (after a fashion) into the bargain, so that he was not likely to confuse the species, which is at once so striking in its characteristics and so rare. On Sunday, November 8th, 1863, Robert Parks, bricklayer, resident in Beverley, saw three strange birds in his orchard, which is close to the town. On the following day they were still in the orchard, and at various intervals during the day Parks succeeded in shooting all of them. Mr. John Stephenson, of the Hull-Bridge House, Beverley, was fortunate enough to secure them, and they were forwarded by him to Mr. R. Richardson, of Beverley, for preservation. I saw these birds at his house, and they were good specimens of the Bohemian waxwing in various stages of maturity. On dissection one proved to be an old female specimen in splendid plumage; another a male, probably of the second year; and the third was a young female of the present year. On November 19th a young female of this species was brought to me. It had been shot by John Mundy, a bargeman, whilst feeding amongst some hawthorn bushes on Figham, one of the common pastures of Beverley. It was alone. On November 21st a very fine mature male specimen was brought to me by Mundy. He had just shot it, and it was still warm. He saw and shot it near to the place where he shot the first specimen. This bird also was alone. No other specimen has since been shot in this neighbourhood to my knowledge. On dissection I found in the case of all the five specimens recorded that the only food in crop or gizzard was the fruit of the hawthorn. I had previously supposed that all hard-billed birds, were in the habit of swallowing grit and small portions of sand or gravel to aid the gizzard in the mechanical trituration of the food. I found, however, that in all these five specimens of this bird there had not been the smallest portion of grit swallowed with the food. I observed, however, that natural instinct had suggested a most efficient substitute for those ordinary mechanical aids, so necessary to the digestive process in hard-billed birds. The haws or haw-berries were evidently swallowed whole. On entering the gizzard they became subjected to a rotatory rubbing or grinding action between the muscular walls of that organ, the effect of which process was that the hard stones containing the seed of the hawthorn rubbed forcibly one upon another, ground off their own fleshy coverings (the necessary food of the bird), and reduced these to a pulp ready for assimilation. The stones themselves, having performed their office of grinders or triturators, passed gradually, one by one, into the intestine, from whence they were eventually voided with the excrement, still unbroken and unaltered. These stones or seeds were in no instance broken, and I found them both in crop, gizzard and intestines. In the crop they were still covered by the flesh of the hawberry intact. In the gizzard they were more or less denuded of their fleshy covering, caused by mutual pressure and friction, under the action of this muscular organ or natural mill. In the intestines they presented themselves as naked, useless, foreign bodies; and as such fit only for exclusion. I observed that by far the greater number of these stones were to be found in the gizzard itself, which would lead me to suppose that they were retained in that organ for a longer period than their fleshy coverings. These, having been removed and passed on for the purposes of assimilation, left space for a further supply of ingesta, whilst the stones remained behind to assist in triturating the fresh accession; until, owing to mechanical inconvenience from their accumulation, they were passed away one by one, simply making room for other and similar triturating aids.—*W. W. Boulton; Beverley, November* 25, 1863.

Waxwings near Warrington.—A small party of waxwings were seen in this neighbetween a fortnight and three weeks since. They perched on some alder bushes in the garden hedge within eight or ten yards of the windows of Mr. C. Claus, and remained about ten or fifteen minutes picking off a few berries that had been left on. *James Cooper; Museum, Warrington, December* 14, 1863.

Brambling in Sussex.—A male and female mountain finch have been shot in this neighbourhood, and are now in my possession.—*C. S. Maurice; East Court Cottage, East Grinstead, Sussex, December* 14, 1863.

[These birds have been unusually abundant near London this winter.—*Edward Newman*].

Hawfinch Shot near Beverley.—I have just obtained a good male specimen of this peculiar looking bird, whose chief peculiarity, however, really exists in the very perfection and development of mandible, on the immense power of which its ability to procure fitting sustenance depends. My specimen was shot yesterday, November 24th, amongst some bushes, on Westwood, one of the common pastures of Beverley, by Mr. Gamsby, of this town, who saw and shot another, but so shattered it that he did not consider it worth bringing home. Until last winter, when several specimens were obtained on Westwood, I only remember having seen a single hawfinch, shot in this neighbourhood. In the well-wooded portions of the midland counties I believe this bird is not uncommon; but in the East Riding of Yorkshire I have always heard it spoken of as more or less rare, and in this immediate neighbourhood undoubtedly so. On dissection I observed a curious combination of circumstances, in some respects resembling the internal economy of the Bohemian waxwing, and in others exactly the reverse. Both crop and gizzard were full of the kernels and broken portions of the stones of the sloe or bullace as it is termed in this locality. In this instance the bird evidently had fed upon the contents of the stone, and not upon its fleshy covering, as in the case of the Bohemian waxwing; but on the other hand, in this instance, as in the case of that bird, I found that the stone of the fruit upon which the bird had fed was used instead of grit, as a triturating medium during the process of digestion, not a single portion of the latter being present, although both crop and gizzard were heavily charged with food. In the case of the hawfinch, however, the stone had been broken by its powerful mandibles to extract the kernel, on which it feeds; a sufficient number of stony particles being retained in the gizzard with the kernels to assist that organ in their trituration. In the hawfinch, then, we find portions of the stones of fruit acting as triturating media in the gizzard; and which, together with the assistance of the powerful mandibles, prove sufficient to accomplish that process. In the waxwing we find the stones of fruit unbroken, and contributing to the same end. In the former case it becomes a necessity for the bird to break the stone, inasmuch as it feeds on the contents. In the latter case it is equally necessary for the bird to preserve the stone intact, so that several of these stones may serve as the grinders of their own fleshy coverings, when rubbed together by the muscular action of the gizzard, acting upon one another more perfectly in the unbroken state than they possibly could do if broken, in which latter case they would cut the flesh (which is the food), and not reduce it to a pulp fit for assimilation, as they actually do crush and prepare it. I have only had the opportunity of dissecting this single specimen of the hawfinch, and therefore beg to submit my remarks with the utmost deference to the experience and opinion of other observers. In addition permit me to suggest as an inquiry, Would not both these birds, *viz.*, the Bohemian waxwing and the hawfinch, swallow grit, &c., like other hard-billed birds, if compelled to feed on other food than stone fruit? or, do they live entirely on stone fruit when in a wild state? I have kept the hawfinch in captivity, when I fed him upon hemp seed, but as I often collected haw berries for him, and eventually set him at liberty instead of dissecting him, I cannot decide the question. I certainly never saw him crunching sand, although I have frequently watched him crush the haw stones as though they had been made of paper. Is it not singular that the hawfinch I dissected should have fed upon the kernels of the sloe, which is by no means abundant here, when he was in the midst of hundreds of hawthorn bushes well stored with the fruit, which I always imagined he preferred to any other, and from which circumstance, indeed, I believe he derives his name?—*W. W. Boulton; November* 25, 1863.

Nesting of the Lesser Redpole at Dalkey.—On the 19th of July I found a redpole's nest in our shrubbery. It was situated between the trunk and a bough of a lime tree, about eight feet from the ground. The young were fully fledged. This is the first instance of the redpole breeding in this neighbourhood to my knowledge.—*H. Blake-Knox; Bartragh, Dalkey, Co. Dublin, October* 28, 1863.

Food of the Rook.—Mr. Edmund Harting (Zool. 8816) seems to doubt that rooks feed on "birds, field-mice, young rabbits, different animals and decaying substances." As the rook is a much persecuted bird I have the more pleasure in being able to fully endorse M. Prevost's observations on its food. The rook is omnivorous, but its chief delight is carrion, and this, from a rat to a sheep, it greedily devours, no matter how decomposed; in fact, the more disgustingly putrid, the more the rook appears to enjoy it; in short, the rook may truly be termed the British vulture. They will also readily kill and devour young birds and field-mice; and instances have even come under my own observation in which young lambs, in a weak state, have been attacked by rooks, the onslaught being made by their first picking out the eyes of the lamb. Non-naturalists and the public generally appear to be impressed with the very erroneous idea that naturalists wish to infer that no birds should be destroyed: this is a very palpable mistake. The great pleading of naturalists is to do away with the present wanton and indiscriminate destruction of small birds. Nothing appears to me more simple than to draw a well-defined line between the wholly insectivorous and partly granivorous birds, for as a rule, with few exceptions, the wholly insectivorous are unfit for food, whereas the partly granivorous, such as the sparrow, greenfinch, &c., are delicious when nicely cooked; and although by eating "sparrow pie" we may not visibly enlarge our intellectual faculties, still we have the gratification of having partaken of a most wholesome and nourishing dish. Since, therefore, by man the natural destroyers of these birds have become nearly exterminated, by man must they necessarily be kept within reasonable bounds. By-the-bye, can you or any of your readers give me any information as to the northern winter range of the ringdove or woodpigeon?

At this season of the year they visit the south of England in immense flocks, and in severe winters do an incredible amount of damage to green crops, such as rape, turnips, &c.—*Henry Reeks; Manor House, Thruxton, November* 10, 1863.

The Food of Rooks.—I see at Zool. 8816 a note on the food of rooks, doubting the assertion of M. Prevost that the food of rooks consists amongst other things of "birds, field-mice, young rabbits, different animals and decaying substances." As to young rabbits I can quite bear out the assertion of M. Prevost; for in the spring of 1862 I saw and watched for some time a rook busily engaged in feeding on something close by a hedge. So busy was he that he let me approach quite close before he flew away, and joined a flock of his companions in the next field, so that I am quite sure of the fact that the bird was a rook and not a crow. On going up to the place to see what the rook was feeding on, I found a young rabbit quite warm and only just dead, but with part of the entrails eaten. I cannot of course say that the rook killed the rabbit, but I should think it extremely probable, as the rabbit had been so recently killed when I came up and drove the rook away. We may also add sand eels to the list of articles forming the food of the rook given at Zool. 8762, as I have frequently seen them at Teignmouth feeding with the gulls on sand eels, especially just after the seine had been thrown for these fish. Walnuts I know also, to my cost, form a large part of the food of the rook in September and October.—*Cecil Smith; Lydiard House, November* 3, 1863.

Rooks Breeding in November.—On Thursday last, November 19th, Mr. J. Thorpe, of Rye Common, near Odiham, examined four rooks' nests on land in his occupation, all of which had young in them.—'*Reading Mercury*,' *November* 21, 1863.

Domesticated Magpies.—My uncle, Major Mortimer, resided for some years in the very secluded hamlet of Sandypark, in the parish of Drewsteignton, Devonshire. A magpie had built a nest at a little distance from the house, and when the two young magpies which it contained were about half-fledged, my uncle carried the nest and its contents into one of the bed-rooms, and placed it in a large wicker cage, leaving the door open, and at the same time the window of the chamber. The old bird very soon mustered sufficient courage to come and feed them, and when the young ones became old enough to fly away they were not prevented from doing so. My aunt and a niece occasionally fed these birds, and on their being set at liberty they would fly to them, when they were walking in the garden, and indeed sometimes at a very considerable distance from the house, and they were so familiar as to eat out of their hands. They were also in the habit of flying in at the windows of the cottagers, and of carrying off anything that was portable within their reach; so that to prevent Lynch law from being executed on her pilfering pet *protegées*, my aunt had to manufacture net blinds for all the cottage windows in the hamlet. After this things went on very well for some time, the magpies joining them in their walks, sometimes hopping and chattering just before them, then taking a flight and after a time rejoining them again. At length Good Friday came, and with it some idle lads from Mr. Berry's manufactory at Chagford, one of whom, armed with a fowling-piece, thought he had performed a prodigy of sportsmanship in shooting one of these familiar birds, who, alas! had been too tame to keep bad company at a sufficient distance. The other bird pined away, surviving his companion but a very short time.—*Thomas Mortimer; Braunton.*—[*Communicated by P. H. Gosse, Esq.*]

Two Cuckoos' Eggs in one Nest.—A correspondent (Zool. 8822) mentions that he found two eggs of the cuckoo in one titlark's nest; but it must be inferred that two females laid one egg each,—that wonderful instinct implanted by the Creator seldom fails,—as the foster-parents could not find food for two such ravenous young ones. I have never heard of two young cuckoos being brought up in one nest; so that, somehow or other, one of the two eggs or young must have been got rid of, and the question is, how? I was acquainted with the late Dr. Jenner, who wrote by far the best history of the cuckoo extant, and he never met with two cuckoos in one nest: the hedgesparrow's, the wagtail's and the titlark's are the three favourite nests visited by the cuckoo, but indubitable proof has been shown that, when hard pressed, several others are chosen. In a former notice of the cuckoo I gave a short account of a young one having been found in a hedgesparrow's nest, in Northamptonshire, by a schoolboy friend and myself, which bird was kept in a cage for six weeks, and was fed by its foster-parents, until one of the latter was found dead, and the cuckoo died soon after. The cuckoo was supposed by Dr. Jenner to lay three or four eggs, but each egg in a different nest.—*H. W. Newman.*

Kingfishers' Nests.—Will Mr. Charles Stubbs, who writes (Zool. 8818) that he has "repeatedly taken kingfishers' nests," but "never found anything more than a few fish-bones and scales mixed up with the loose mould on the floor of their burrow," be so kind as to say whether there were eggs in each instance that he refers to, or whether he ever saw young birds in such quarters as he describes? The author of 'Life in Normandy' has broached a curious theory, founded on personal observation of the habits of these pretty birds,—that the eggs are laid on the bare ground, and when the brood is hatched a wall is gradually built up of pellets of half-digested fish-bones, &c., thrown up by the young birds in a soft state. Each day's addition is carefully arranged and smoothed down from the inside, and the whole hardens into a round whitish nest, which, by the time the family is fledged, is generally sufficiently firm to be dug out of the bank without breaking. It would be interesting to know how far Mr. Stubbs' experience (which must be considerable) would agree with this suggestion. —*T. Digby Pigott; Pinner Wood House, Watford, November* 3, 1863.

Scarcity of Swallows.—A correspondent (Zool. 8824) says, as far as martins are concerned, their scarcity may be accounted for by their being turned out of their nests by the house sparrows, and then adds, "No wonder that the martins are diminished in number;" and concludes by remarking, "What will the small-bird preservers say to this my true and unvarnished tale!" There can be few of them, and no ornithologists who are not aware of the house sparrow's habit of appropriating the nest of the martin, but how that is to account for the scarcity of the latter this season (referred to by more than one writer) I cannot conceive, unless the house sparrow has increased two-fold, and there is reason to believe the contrary. Owing to the innumerable houses, barns and other buildings of superior elevation, constructed of late years throughout the length and breadth of the land, there can be no doubt that martins, and swallows too, have greater facilities for nesting than at any other former period, notwithstanding the increase of sparrows, which has yet to be proved.—*H. Hadfield.*

Late Stay of the Swallows.—A great deal of nonsense was written in the 'Gardener's Chronicle' and elsewhere about the late stay of the swallows, when we were not half through October. I have been watching them all my life, and never before had the gratification of seeing them so late as I have this year. The latest swallow I have ever seen in previous years was on the 5th of November. Several chimney swallows were flying about here on the 15th: since then I have looked out for them daily in vain.—*W. C. Hewitson; Oatlands, November* 21, 1863.

[None of my correspondents have forwarded those later accounts of the stay of swallows and martins, which are of still greater interest: thus an anonymous writer in a provincial paper says that at Tenby, on the 7th of December, swallows were flying about the cliffs in undiminished numbers; a very similar report comes from Hastings, and a third from Torquay: will any naturalist attest these statements, giving his name and address? Such statements, if founded on fact, ought to be preserved: I now allude to them only as newspaper cuttings.—*Edward Newman*].

A White Swallow.—About a fortnight since, when the Earl of Stamford was staying at his seat at Bradgate Park, Leicestershire, his lordship was informed that for a month past a white swallow had been seen about in the neighbourhood of the mansion, and was asked whether he would have it shot. The noble earl directed that his rare little visitor should not be molested.—'*Field.*'

Late Departure of the Swifts.—More than one correspondent of the 'Zoologist' has noticed the late stay of the swifts with us this year: the explanation which occurs to me for these wonderful birds deviating from their usual habit, is that the summer of 1863 has been a most eccentric one: the month of May was very cold, the last fourteen days of it particularly so, and retarded their nidification; then came June, with its twenty-five days of continued rain, which added to their discomfort. I have taken great pains to watch these birds, and in the late summer they did not commence their joyous scream of delight at a warm temperature until much later than usual. The scream of the swift is often a sure sign of approaching heat, and when the temperature is from 75° to 80° Fahrenheit they may be heard early in the morning until past mid-day uttering their peculiar cry: in cold, wet or windy weather they are very silent. At present I do not live near any of their nesting places, but I have noticed the great bulk of them leave between the 10th and 14th of August: those which remain I have always observed were birds which were hatched very late in the season, and these I have frequently seen, with the parent birds, as late as the 24th of August. The swift has seldom more than one hatch of young ones during a summer in England. As showing the unusual state of the past summer, I may mention that the bees were retarded a full month by the wet in June (generally the real honey-gathering month), and nearly all the honey, where no heath was to be found, was gathered in July, thus reversing the order of things: some swarms, which came off as late as the first week in July, made from 20 lbs. to 30 lbs. weight of honey—a very rare occurrence.—*H. W. Newman.*

Turtle Dove near Beverley.—On Friday, October 2, 1863, an extremely fine specimen of the turtle dove (*Columba turtur*) was shot at Catwick, a village near Beverley, by Charles Russell, of Hornsea. The bird was in splendid plumage, and on dissection proved to be a mature female. I received it in the flesh, and it is now in my collection. Catwick, close to which village the bird was shot, is about eight miles and a half from Beverley, and five miles from the sea.—*W. W. Boulton.*

Sand Grouse in the Baltic.—During the summer a flock of sand grouse, about eighty in number, made their appearance on the small island of Borcum, a bathing-place off the coast of East Friesland, belonging to Hanover. Unfortunately there resides on the island a revenue officer of destructive propensities, who, with the assistance of some of the visitors, has succeeded in reducing their numbers to less than one half, and was a few weeks ago still at work waging a war of extermination against the pretty little strangers. They have now become so wild and shy that we may have some hope for the remnant. A second flock is settled on the neighbouring island of

Nordeney, and one out of a pack of ten was shot in the vast range of heath and moorland which separates Hanover from Holland.—'*Field.*'

Pallas' Sand Grouse in Wiltshire.—I am sorry that absence on the Continent has prevented me from sending you earlier notice of the occurrence of the above bird in this county. It was a female, quite alone, and evidently a straggler from the main body, which seems to have directed its flight along the eastern coast. It was observed on the 29th of June last, and was killed by Mr. Joseph Dean, in the parish of Imber, a very exposed, not to say desolate, district on Salisbury Plain, and very nearly the same locality whence I obtained my specimen of the pratincole, as recorded in the 'Zoologist' (Zool. 3843). Mr. Dean adds that its flight was rather rapid, and that it was flying, when he met with it, over some arable land, the direction being from north to south.—*Alfred Charles Smith; Yatesbury Rectory, Calne, November* 5, 1863.

Pallas' Sand Grouse in Shetland.—This remarkable bird, so long expected, has at last appeared in these islands. On the morning of the 28th of October, after a steady breeze from S.W., I caught a glimpse of one as it dashed out of a clump of elders in the garden at Halligarth, and next day I obtained an equally brief view of one beneath a willow hedge not far from the same spot. About the same time birds precisely answering to the description of this species, were seen at Haroldswick, and also in the island of Balta. On the 2nd of November I saw one in a stubble field close to the sea-beach, where, after much trouble, I shot it two days afterwards. It usually kept to the most exposed situations, and was so extremely shy that I am sure I should never have got it had I not chanced to see it as it rose from some long grass, which served to screen me from observation. It always took wing at the slightest appearance of danger, at the same time uttering a succession of clear, distinct notes: its wildness and its similarity in colour to the soil prevented me from seeing much of its feeding habits, but it appeared to advance with a gentle gliding motion, keeping the breast so low that the feathers of that part came in contact with the ground, as was evident by their wet and muddy state when the bird was shot. The flight was much like that of the golden plover, and sometimes extremely rapid: once, when the bird happened to get among some starlings, it was surrounded and mobbed by them, as though it had been a hawk, but a few strokes with its wings soon carried it beyond the reach of annoyance. It proved to be a female, the ovary containing a large cluster of eggs, many of which were about the size of turnip-seed: the elongated feathers of the wings and tail were in perfect condition. The only fat was at the lower part of the neck, where it was present in considerable quantity, and there was a peculiar want of firmness in the flesh. The crop was distended to about the size of a chestnut with seeds, a few of which were of a kind unknown to me, but the greater number were those of Stellaria media and Plantago maritima; in the gizzard there were crushed seeds and a large quantity of clear, rounded fragments of quartz. I was disappointed in my expectation of finding barley in the crop, as a great deal of that grain was strewn about the portion of the ground most frequented by the bird. The appearance of the sternum is remarkable, partly on account of the depth of the keel, which is very great in proportion to its length, and, among British birds at least, only equalled, but not exceeded, in that respect by that of the swift: it is very different from that of the true grouse (and I think also of the quail and the partridge), in which there are always two sinuses, and the furcula is long, slender and furnished with a large flattened process at the junction of the crura, whereas, in the sternum of the present species, there is but one sinus, and the furcula, besides being short and rather stout, is merely furnished with a small and somewhat rounded knob.—*Henry L. Saxby; Baltasound, Shetland, November* 9, 1863.

Pallas' Sand Grouse breeding in Denmark.—I have much pleasure in giving you all the information in my power respecting the breeding of Syrrhaptes paradoxus in Denmark. On the 1st of August Professor Reinhardt, of Copenhagen, wrote to me that at least six or seven nests had been found in Jutland. He had received four eggs thence. As in Pterocles, three is the regular number laid in each nest. Both sexes assist in incubation. I have written for further details, and mainly on account of their non-arrival, I have deferred till our April number the article on Syrrhaptes which Dr. Sclater requested me to write for the 'Ibis.' The facts above mentioned I announced at the meeting of the British Association at Newcastle-on-Tyne, but the paper I then read was very short, and scarcely went into details. My chief object in drawing attention to the subject then, was, if possible, to stay the slaughter of our visitors; but I fear, from what has since transpired, that I did no good. The reports given by the various newspapers were extremely inaccurate, and very much misrepresented what I said.—*Alfred Newton; Magdalene College, Cambridge, December* 6, 1863.

Sand Grouse in Caithness.—Two specimens of the sand grouse were procured in Caithness last summer, one being shot from a covey of ten or twelve birds, on the farm of Westerseat, near Wick, on the 8th of June. The second was shot a few weeks after on a piece of hilly ground about eight miles from Wick.—*H. Osborne, jun.; Wick, November* 21, 1863.—'*Field.*'

Sand Grouse near the Moray Firth.—Around the sandy shores of the Moray Firth at least three specimens of this rare visitor have been obtained; doubtless many others have been associated with these. One was killed near Lossiemouth by a labourer who occasionally shoulders his fowling-piece: the particulars of the capture I have not ascertained. I saw a specimen of the sand grouse in the possession of Mr. M'Leay, a taxidermist, living at Inverness: it was shot near Dornoch in August last. In a note dated the 8th of December, Mr. M'Leay states, "I had another specimen (of sand grouse) in September, that was shot by some one of the Duke of Richmond's party at Gordon Castle,—a female. The one I had before (from Dornoch) was a male. The female does not appear to have the pinnated feathers in the tail and wings."—*George Gordon; Manse of Birnie by Elgin, December* 12, 1863.

Sand Grouse in Cheshire.—A fine male specimen of Pallas' sand grouse (*Syrrhaptes paradoxus*) was shot early in this month near Leasowe Castle, by Mr. Simpkins, of Chester Street, Birkenhead, who has placed it in the hands of Mr. Newby for stuffing. I have seen it at Mr. Newby's, and find it has the lengthened first primary in each wing quite perfect, and the two central tail-feathers also perfect, the prolongations extending full five inches beyond the rest of the tail. The plumage is, however, rather sooty-looking. This is the second occurrence of this bird in our district.—*Thomas J. Moore; Derby Museum, Liverpool, November* 20, 1863.

Abundance of the Corn Crake.—With regard to the corn crake, I think I can afford some striking information. In the old stage-coach time I have travelled through a summer night, at the rate of eight miles an hour, without ceasing to hear for five successive minutes the dissonant discord of this singular bird: conceive by this fact the vast number of birds that I must have heard. The fact of their being singularly prolific I afterwards ascertained, on cutting some hay in a small field of less than an acre, when the mower's scythe revealed two nests of this bird, with eggs to the number of twenty-three. This bird, being nocturnal and very shy in its habits, is rarely seen: I have lived in the country over forty years, and I do not think I ever saw a dozen of them, though I must have heard thousands. I think them much too weak on the wing to migrate across the channel.—*Thomas Mortimer; Franklin Cottage, Braunton, May* 25, 1863.—[*Communicated by P. H. Gosse, Esq.*]

Spotted Crake in Hampshire.—A very good specimen of the spotted crake (*Crex porzana*) was brought to me some time ago by a labouring man, who informed me that he had caught it in a trap set for water-rats. It was a female, and the gizzard contained the remains of water plants and small shells.—*J. J. Armistead; Queenwood College, October* 25, 1863.

Spotted Crake in County Antrim and Storm Petrel in Dublin Bay.—During a stay in Belfast last September I purchased a spotted crake, killed by a poor boy with a stone. Last autumn I killed a storm petrel in Dublin Bay.—*H. Blake-Knox; Bartragh, Dalkey, County Dublin, October* 30, 1863.

Spotted Crake near Beverley.—This elegant species appears to be of very local occurrence. A few are generally to be found amongst the sedges along the banks of the river Hull each year. I have seen no less than sixteen specimens already this year, and others have been seen that were not captured. Up to October 13th three specimens were shot; from the 13th to the 26th there were twelve shot and three seen; and on the 2nd of November a specimen was taken alive; making a total of nineteen specimens, of which fifteen were shot, one was brought to me alive and uninjured, having been caught by a boy, and three were seen by Mr. W. Stephenson, of Hull Bridge, near Beverley. I am inclined to believe that the spotted crake breeds with us, although I have not obtained the egg. Out of the sixteen specimens taken on the river Hull this season, a majority have proved to be young birds; several, indeed, were so young that I think they must have been bred in the neighbourhood. On the evening of the 26th of October I dissected three specimens, one of which proved to be a mature female; the other two birds were, one a young male and the other a very young female,—so young that it could not have travelled far on the wing. The old and young birds too have been observed and sprung together, or within a few yards of one another. I have observed that, as a rule, the young are smaller than the old birds; that the belly of young birds is whiter than in mature specimens; that the feathers on the sides and thighs of the young are not so richly striated with black as on those of older birds; that the chin of the young bird is whitish gray, that of the old one slate or ash-coloured; and that the band over the eye and outer half of the forehead in the young is speckled with white, whilst in old birds it is almost uniform ash-colour. In the craw of the mature female I found nothing but six or seven water and marsh snails, in their shells: in the gizzard of the same bird I found a collection of the remains of similar snails and their shells mixed up with vegetable matter.—*W. W. Boulton.*

Gray Phalarope in Caithness.—A gray phalarope was shot in Wick Bay, on the 7th of October, by Mr. John Tudor; and on the 19th of the same month a second specimen was procured near the South Head, by Mr. W. Peach. These are the first instances of the occurrence of this species in Caithness.—*H. Osborne, jun.; Wick, November* 21, 1863.—'*Field.*'

Solitary Snipe near Beverley.—I saw last evening a splendid specimen of the solitary or double snipe in the flesh; it had been brought for preservation to Mr. R. Richardson, taxidermist, of this town. The bird had been shot yesterday by Mr. W. Stephenson, of Hull Bridge, on the river Hull, about half a mile above the bridge.

Its weight was eight ounces and two drachms, the bird being loaded with fat. On dissection it proved to be a female. Length, from tip of bill to tip of tail, 12 inches; across the extended wings, 19 inches. Its gizzard contained nothing but a few seeds and vegetable matter: is not this remarkable? I thought that snipes lived wholly upon insects, larvæ and worms. I called the attention of two or three witnesses to the fact, in order to avoid mistake. I now much regret that I did not keep the contents of the gizzard.—*W. W. Boulton; Beverley, October* 23, 1863.

Little Stint in the Isle of Wight.—A fine specimen of the little stint (*Tringa pusilla*) was shot here by Mr. S. Parry, R.A., on the 29th of October. This is a new addition to our list of Isle of Wight birds. I have preserved the bird.—*Henry Rogers; Freshwater, Isle of Wight, December* 7, 1863.

Sclavonian or Dusky Grebe near Beverley.—I have just purchased, in the flesh, a beautiful female specimen of the Sclavonian grebe (*Podiceps cornutus*). It was shot on the river Hull, where it flows along the eastern boundary of Figham, one of the common pastures of this town, and about a mile below Beverley. The bird was shot by William Hoggard, of Beverley, on Monday, October 12th, 1863. The eggs in the ovary were about the size of millet-seed.—*W. W Boulton.*

Habits, &c., of the Little Grebe.—Having kept this bird alive I have had ample opportunities for observing its habits, which I have not seen particularly noted elsewhere. I had a very large glass globe with small living fish in it, and into this the bird was able to go when inclined to feed. It was so tame that in my presence it would dive after the fish, bring them up, and swallow its capture whole. It was very fond of fresh meat, which it took from my hand. When resting it does not place its feet upon the ground, but turns them up so as to place them under its wings, which it covers with its side feathers, and thus entirely hides them from view: it will also rest in the same manner upon the water. The grebes are generally figured as sitting erect, and I was anxious to see if this bird did so, but could not discover that such was the case: it always sat with its breast on the ground, but when walking or running its posture was nearly erect, and it proceeded along with a waddling gait.—*R. Reynolds; 10, Brownlow Street, Liverpool; November* 10, 1863.—'*Scrap-Book.*'

Graylegged Goose near Penzance.—I have just seen a specimen of the graylegged goose (*Anser ferus*) sent from Scilly. It is a fine example; the shoulder part of the wing and greater wing-coverts bluish light gray; the bill considerably elevated at the base, uniform in colour with the nail, white. I scarcely need add that the large flights of wild geese which appear in the West of England in severe weather are, in 90 per cent., the bean goose, with an occasional sprinkling of the whitefronted goose.—*Edward Hearle Rodd; Penzance, November* 30, 1863.

Little Auk in Somersetshire.—I write to record the occurrence of the little auk (*Uria alle*) in this county in two instances; the first was on the 3rd of this month, when Mr. Haddon, of Taunton, had one brought to him alive, which had been caught the day before under some loose faggots on the top of a wood-rick, in the parish of Kingston, near Taunton. The other was picked up dead on the mud at the mouth of the river Parrot, near Burnham, by Mr. Welman: the bird was quite fresh when picked up, and apparently only just dead.—*Cecil Smith; Lydiard House, November* 7, 1863.

Young Puffin in November.—I have to-day received what I believe to be a young puffin of this year, which was shot on this coast last Saturday. I find these birds generally leave this country in August; so this is no doubt a straggler which has been left behind to shift for itself. The beak is much smaller than in the adult bird, and without the yellow markings; the gape has a yellow tinge; the eye-lids are quite without the yellow; the black ring round the neck is perfect; the cheeks are a dark dusky gray; and the feet are a pale flesh-colour: the other parts resemble the mature bird: it is $11\frac{1}{2}$ inches in length. I send these particulars because I can find no description of the young bird in Yarrell, and suppose by this omission that they are but seldom met with so late in the season.—*Edward Neave; Leiston, near Saxmundham, Suffolk, December* 1, 1863.

Wilson's Petrel in the Isle of Wight.—On Friday last I picked up a specimen of the rare Wilson's petrel (*Procellaria Wilsoni*) lying dead, a couple of hundred yards or so from the sea-shore. It was very thin, had probably been driven here in an exhausted state, away from its latitude. There were evident traces of its having been "finished" by a sparrowhawk, which apparently had tasted enough of petrel (no doubt new to him) after one mouthful. Luckily it was quite fresh, and I gave it to Mr. Rogers, naturalist and bird-stuffer, of Freshwater, and I have just seen it admirably prepared and set up by him. I have taken several specimens of this petrel far at sea, south of the equator, towards the South-American coast. I believe there are very few recorded instances of its having been found in, or in the vicinity of, the British Isles.—*C. Delmé Radcliffe; Freshwater, Isle of Wight, November* 24, 1863.—[*Communicated by Mr. Rogers.*]

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

November 2, 1863.—FREDERICK SMITH, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the respective donors:—'Proceedings of the Royal Society,' Vol. xii. No. 57; presented by the Society. 'Catalogue of Halticidæ' (being a continuation of the British Museum Catalogue, Part i. 1860), by the Rev. Hamlet Clark, M.A., F.L.S.; by the Author. 'Motchulsky, Etudes Entomologiques,' 9e Année; by the Rev. H. Clark. 'The Zoologist' for November; by the Editor. 'The Farm and Garden,' Nos. 30, 31, 33 and 34; by C. A. Wilson, Esq. 'The Journal of the Society of Arts' for October; by the Society. 'The Athenæum' for October; by the Editor. 'The Reader' for October; by the Editor. 'A Catalogue of British Coleoptera,' by G. R. Crotch; by the Author.

The following additions by purchase were also announced:—'Genera des Coléoptères d'Europe,' Livraisons 112—116 incl. 'Skandinaviens Coleoptera synoptisk bearbetade af C. G. Thomson,' Vols. 1—5 incl.

New Member.

A certificate in favour of Henry Walter Bates, Esq., as a Member of the Society having been read, it was moved by Mr. S. Stevens and seconded by Mr. Dunning, "That, as in the recent case of the election of Mr. A. R. Wallace (and the consent of the Council having been obtained), the Bye-Laws relating to the election of Members be *pro hac vice* suspended, and that Mr. Bates be now declared to be a Member of the

Society." This was carried by acclamation, and Mr. Bates was thereupon admitted as a Member, and signed the Obligation Book.

Alteration of Bye-Laws; Notice of Special Meeting.

Notice was given that, in consequence of a requisition presented to the President and Council, signed by six Members, a Special General Meeting would be held on Monday, the 25th January, 1864 (the next Anniversary), at 7 P.M., for the consideration of certain alterations in the Bye-Laws specified in the requisition, and the object of which was, to abolish the Library and Cabinets Committee and the Publication Committee, and to vest their powers and duties in the Council, to change the title of Curator to that of Librarian, and to repeal the clause by which it is enacted that no resident in Great Britain shall be an Honorary Member of the Society.

Exhibitions, &c.

The President exhibited the nest of Trigona carbonaria referred to in the 'Proceedings' of the last Meeting; it had been recently received from Queensland, and was constructed in an artificial situation, in the interior of a box, by reason of which its appearance was probably different from the normal form of the nest; on the upper (or free) side was a quantity of matter, of a coralline structure, which was apparently made for the purpose of carrying the nest up to the top of the box, and thereby of attaining additional support. Externally the nest seemed to consist simply of rude spherical honey-pots in contact with one another, or connected by means of the coral-like work before alluded to, but the President thought it probable that there was comb, more or less irregular, in the interior. It was remarkable that not a single female of any of the numerous species of Trigona was known.

Prof. Westwood remarked upon the extraordinary difference of habit between the Brazilian and Australian Trigonæ; the Brazilian species made hexagonal cells in single layers, and the difference was as remarkable as if a species of Apis in England were found to make honey-pots like a Bombus instead of the ordinary nest of a true Apis. This structural modification was so great as to suggest a doubt whether Trigona carbonaria had been rightly placed in the genus Trigona.

The President also exhibited nests of Deilocerus Ellisii, *Curtis*, one of the social Tenthredinidæ: the nests had formerly been exhibited by Curtis at the Linnean Society, and were figured in vol. xix. of the Linnean 'Transactions.'

A lively conversation subsequently took place, on the origin or causes affecting the hexagonal form of the cells of bees, in which the principal participants were the President, Mr. Waterhouse, Mr. Bates and Prof. Westwood.

The President exhibited specimens of Hyponomeuta padella, which had been given to him by one of the assistants in the British Museum, and which were said to have been bred from larvæ feeding on unripe grains of corn. The gentleman in question (to whose general accuracy of observation the President bore testimony) had been walking through a corn-field in Suffolk, plucking some of the ears and eating the grain, when he noticed an unpleasant taste, and on examination found numerous larvæ feeding on the grain; he had put some into a box, and from them had emerged the exhibited specimens of H. padella. It was, however, thought probable by the Lepidopterists present that some mistake must have been made as to the identity of the larvæ from which the moths had been raised.

Mr. Bond exhibited a coloured drawing of the larva of Sphinx Convolvuli, of which seven specimens had been taken on the 17th of September last, at St. Leonard's, feeding on the small bindweed (*Convolvulus minor*); also a specimen of the dark variety of the larva of Acherontia Atropos, found near London, and preserved by Mr. Baker, of Cambridge.

Mr. F. Moore exhibited some impressions of Indian Lepidoptera taken on wax-paper by means of pressure applied to the original specimens.

Mr. Francis exhibited specimens of Anthribus albinus, *Linn.*, taken at Folkestone in the second week of September last; and of Chrysomela fulgida, so arranged as to expose the deep red wings of that species.

Mr. M'Lachlan exhibited a collection of cases of the larvæ of various genera of Trichoptera, showing the different materials, and the different dispositions of those materials, used by the larvæ in forming their defences; some were composed wholly of vegetable matter, others wholly of shells or small pebbles, others again had these substances mixed heterogeneously; whilst one case of the genus Setodes appeared to be composed entirely of silk, without being covered externally with any other substance.

Prof. Westwood exhibited a large sheet of whitish silky matter of extreme smoothness, resembling the finest kid, which had been sent to him by Dr. Cuthbert Collingwood, and had been taken from the bottom of a biscuit-chest; the biscuits themselves were found to have been attacked by larvæ, which were described as resembling those of Diptera. The Professor, however, thought it more probable that the web was the work of Lepidopterous larvæ.

Mr. Stainton said that his first suspicion had been that the sheet in question had been made by the larvæ of Tinea granella; but the matter was more opaque than any he remembered to have seen, and which had been ascertained to be the workmanship of that species.

Mr. Jenner Weir, however, had seen pieces even more dense and opaque, which had undoubtedly been done by the larvæ of Tinea granella feeding upon grain.

Mr. Waterhouse exhibited two specimens of a species of Scymnus, not noticed in his 'Catalogue of British Coleoptera,' and read the following notes thereon:—

Note on Scymnus quadrilunulatus, Muls.

"The exhibited specimens of a species of Scymnus are from Kirby's British collection. In Kirby's catalogue they stand as the Coccinella bis-bipustulata of Marsham (Ent. Brit. No. 46, p. 167), but upon comparing them with the specimen in Stephens' collection, which in the 'Illustrations' is said to be the Marshamian type, I find that Kirby's insect is quite distinct, it being the Scymnus quadrilunulatus of Mulsant's 'Coléoptères de France' (Sécuripalpes, p. 237, sp. 6), a species which is identified by several authors with the Coccinella quadrilunulata of Illiger.

"I have re-examined the Marshamian insect, and believe that my former conclusion respecting it is correct, *viz.*, that it is a four-spotted variety of S. frontalis, a variety which does not appear to be uncommon on the Continent, but which is apparently very rare in England, since no other British example has come under my notice than the one referred to. The statement in the 'Illustrations' and in the 'Manual,' that of the two spots on each elytron the posterior "is the largest," is incorrect, for the anterior spot is the larger.

"The Scymnus from Kirby's collection is a considerably smaller insect, being rather less than S. discoideus. It is of a short ovate form, with the elytra obtusely rounded behind; moderately convex; well clothed with whitish pubescence; black, with the antennæ, parts of the mouth, legs and apex of the abdomen, as well as the spots on the elytra, testaceous; the femora, however, are dusky at the base. The upper surface is densely and finely punctured, but on the elytra the punctuation is rather less dense than on the thorax. The anterior spot on each elytron is moderately large and oblong, extends from the humeral callosity inwards and slightly downwards, and terminates far short of the suture; it is somewhat contracted in width in the middle, and most dilated on the inner half. The second spot is much smaller, placed about midway between the anterior spot and the apex of the elytra, and nearer to the suture than the upper spot; it is slightly transverse, broad and rounded on the side nearest the suture, and gradually contracted in width externally. Both spots show a slight tendency to a lunate form. The reflected margin of the apical portion of the elytra is rufous.

"I have seen no other reputed British examples of this species, and hope that this notice will elicit further information.

"Stephens, in his 'Illustrations' (Mand. iv. p. 393, sp. 7), very briefly describes an insect (Scymnus colon) in these terms:—'Shining black, slightly pubescent; thorax immaculate; elytra each with two small luteous spots placed longitudinally; apex of abdomen rufescent. Length 1 lin. I have seen one specimen only of this species, which was captured at Wood Ditton, May 19, 1827; Rev. L. Jenyns.' Should this be identical with the insect exhibited (and I think with Mulsant that such is the case), we have here a locality for the species."

Paper read.

Mr. Stainton read a paper "On the European species of the Genus Cosmopteryx;" this was illustrated by a single coloured figure, which, by an ingenious contrivance, was made to display the characters of and distinctions between four of the closely-allied species.

December 7, 1863.—FREDERICK SMITH, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the respective donors:—'Proceedings of the Royal Society,' Vol. xiii. No. 58; presented by the Society. 'Journal of the Proceedings of the Linnean Society,' Vol. vii. No. 27; by the Society. 'Proceedings of the Royal Physical Society of Edinburgh,' Sessions 1858-62; by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' Année 1862, Nos. 2, 3, 4; by the Society. 'The Journal of Entomology,' Vol. ii. No. 9; by the Proprietors. 'On Parallel Relations of the Classes of Vertebrates, and on some Characteristics of the Reptilian Birds;' 'The Classification of Animals based on the principle of Cephalization;' by the Author, James D. Dana, Esq. 'On the Genus Acentropus;' by the Author, Edwin Brown, Esq. 'Notes on some new or little-known species of Freshwater Entomostraca;' by the Author, John Lubbock, Esq., F.R.S., F.L.S., &c. 'Sepp, Nederlandsche Insecten,' 2e Série, Nos. 11—34; by the Author, C. Snellen van Vollenhoven, Esq. 'The Intellectual Observer,' Nos. 22 and 23; by the Publishers. 'The Zoologist' for December; by the Editor. 'The Farm and

Garden,' Vol. iii. Nos. 35, 36, 38—41; by C. A. Wilson, Esq. 'The Journal of the Society of Arts' for November; by the Society. 'The Athenæum' for November; by the Editor. 'The Reader' for November; by the Editor. 'Stettiner Entomologische Zeitung,' 24 Jahrg. Nos. 10—12; by the Entomological Society of Stettin.

Election of Member.

George Bryant, Esq., of the India Office, Victoria Street, Westminster, was balloted for, and elected a Member of the Society.

Alteration of the Bye-Laws.

Notice was given that a Special General Meeting would be held on Monday, the 25th of January, 1864, at 7 P. M., for the consideration of certain proposed alterations of the bye-laws.

Exhibitions, &c.

Mr. S. Stevens exhibited a large box of Coleoptera collected by the Rev. Mr. Gerard in the Zulu Country; and a specimen of Polyommatus, taken in the Isle of Wight, which appeared to be intermediate between P. Adonis and P. Alexis.

Sir John Hearsey exhibited some Indian Lepidoptera, principally Noctuidæ and Geometridæ.

Mr. W. W. Saunders called attention to the injury done to an Orchid by one of the Cimicidæ: the Orchid was a Catasetum, which had been imported from Brazil about eighteen months before; the bug was a Bryocharis, probably also an importation, but Mr. Saunders was inclined to think that it had come from Hayti, from which locality he had, only two months ago, received a collection of Orchids, among which a species of ant (Formica herculanea ?) had been found. The Bryocharis, when disturbed, exhibited extreme activity, and destroyed the plant in a manner similar to Thrips.

Professor Westwood produced a MS. entomological journal of the late John Curtis, being a volume containing a page for each day of the year, and comprising upwards of two thousand entries, written without very careful attention to grammatical rules, but with the exquisite neatness which characterized the author's caligraphy. The observations of successive years were recorded on the same page belonging to the day of the month on which they were made; the year was entered in one column, the plant or material attacked or infested was named in a second column, and the insect attacking or infesting in a third; these were followed by more particular details as to the nature and extent of the injury done, and generally as to the habits of the species under observation. The Professor observed that perhaps, on the whole, there was no better plan of keeping an entomological journal, but the manifest objection to it was that it was merely chronological (or rather seasonal), and there were no means of referring at once to all the observations on the same subject; but an index was required both of the attacking insects and of the objects attacked.

Professor Westwood also produced, as another Entomologico-literary curiosity, a MS. page of the Proceedings of the Norwich Entomological Society, of which the following is a copy:—

"Third Meeting. At Mr. Curtis's, December 4, 1810.

"A paper was read (No. 4) from Mr. Curtis, on the powers of sound possessed by some individuals among the Coleoptera.

"A paper was read (No. 5) from Mr. Wilkin, on the genus Geotrupes of Latreille and Dumeril, defining its characters and dividing it into sections.

"A paper was read (No. 6) from Mr. Wilkin, on the Linnean species of the Carabi, with observations resulting from an examination of the original specimens labelled by Linneus, and preserved in the Linnean collection now in the possession of Dr. Smith.

"Some remarks were made on the subject of Mr. Curtis's paper, in opposition to the hypothesis proposed by him, *viz.*, that the sound produced by C. fuliginosus and others when captured arises from the friction of the abdominal segments on each other. The majority rather attributed the sound to friction of the edges of the elytra.

"Mr. Wilkin communicated to the Society the result of an experiment which he had made on Blaps lethifera. The ammoniac scent attributed to the insect by Mr. Sparshall suggested that possibly some crystallization of ammonia might be obtained from it. But after destroying a large number of specimens by hot water in a confined vessel, and thereby obtaining a strong solution of the juices of the animal, Mr. P. Taylor (who assisted Mr. W. in the experiment) ascertained by the test of a strong solution [*here a blank occurs*] that there was not the smallest portion of ammonia. By dissection, the discriminating characters of the sexes were ascertained, the male being considerably broader and shorter; the mucro of the elytra is shorter, and at the base of the abdomen is seated a small tuft of yellow hairs. In size and punctuation this species varies considerably. Some specimens are smooth, others much more roughly punctured. In the collection of the late Mr. Beckwith is preserved a specimen of the male having one elytron smooth, the other so deeply punctured as to be rugulose. And among the specimens captured at the Horse Barracks by Mr. W. he was fortunate enough to meet with the female of this singular variety, which, together with some of the Carabi mentioned in No. 6, were exhibited.

"At the request of Rev. W. Kirby, of Barham, we elected him a Member of the Norwich Entomological Society."

Professor Westwood exhibited specimens of two new Coleoptera, each of such singular form as to necessitate the creation of a new genus for its reception: they were characterized as follows:—

Genus OGCOCEPHALUS, *Westw.*

Genus (vel potius subgenus) novum in familia Malachiorum Cephalogoniæ, *Wollast.*, proximum. Differt capite in maribus prothorace fere duplo latiori, postice excavato, excavatione latâ, antice trisinuatâ, in medio tuberculo minuto obscuro instructâ; facie in utroque sexu antice brevi nec conica. Antennæ breviores, simplices, articulo 2do minuto, 3tio et 4to sequentibus haud multo brevioribus. Prothorax brevis late cordatus. Palpi labiales articulo ultimo subovali (nec subsecuriformi). Elytra modice elongata, apice in singulo rotundato.

OGCOCEPHALUS CAPITO, *Westw.*

Lutescens nigro varius. Capite nigro excavatione ♂ luteo variegata. Prothorace fulvescenti macula magna media, alterisque duabus parvis lateralibus (interdum confluentibus). Elytris luteis, humeris late, cum scutello maculisque duabus magnis subapicalibus nigris.

Long. corp.

Habitat in Insula Canariensi. D. Wollaston.

Genus AGLYCYDERES, *Westw.*

Genus anomalum, et quoad affinitates dubium, quamvis Anthribidibus, ut mihi videtur proximum. Corpus oblongum, depressum obscurum setosum. Caput in maribus ante oculos prominentes in cornu utrinque productum, postice in collum angustum contractum. Antennæ rectæ, filiformes, 11-articulatæ. Mandibulæ breves crassæ trigonæ obtuse tridentatæ. Maxillæ planæ subtrigonæ margine interno spinis rigidis curvatis armatæ. Palpi maxillares abbreviati, conici, articulis 3 basalibus brevissimis. Labium rotundatum corneum, valde setosum. Palpis labialibus minimis, conicis. Prothorax subquadratus lateribus rotundatis. Pedes breves crassi, tarsis brevibus articulis 2 basalibus subbilobatis, 3tio minimo nodiformi, 4to longiori clavato, ungues 2 simplices instructo.

AGLYCYDERES SETIFER, *Westw.*

Obscure fusco-nigricans punctatus, elytris striato-punctatis, punctis setas albidas emittentibus.

Long. corp.

Habitat in Insula Canariensi. D. Wollaston.

Mr. W. F. Kirby produced a copy of Dr. Loew's recently-published work on the European Trypetidæ, illustrated with twenty-six enormous photographic plates of the wings.

Captain Cox sent for exhibition a series of admirably-executed photographic pictures of groups of insects, accompanied by the following:—

Notes on the application of Photography to Entomology.

"I beg to forward a few notes on the method of applying Photography, as a means of illustrating single specimens or cabinet drawers of insects; and I believe from the success that has attended my first effort that I do not over-estimate the great value this art will ultimately prove in rapidly delineating, with most perfect accuracy, either single specimens or groups of insects; and I also believe we are on the threshold of a very marked period in the advance which the science of Natural History is now likely to take, aided by a power so quick in action, so accurate in detail, and so exquisitely beautiful in its general character as Photography; and I think before long the appliance of this new Science will enable us to have our entomological *cartes de visite* in the form of photographic groups of classes of insects, according to the speciality of the collector's taste; and I am led to believe that, as we progress in this knowledge, all who have fine collections, and have also the command of moderate means, will not rest satisfied until they have had them copied by means of Photography, thus handing down to posterity a faithful record of what once existed,—the result of long, patient and assiduous collecting, of untiring zeal, of minute and close application. Again, as the knowledge and appliances of the photographic art are now so generally diffused over the civilized world, it may occasionally occur that rare or interesting specimens of insects may be collected, and yet no means of preserving them be at hand; as from very many causes, unless the greatest care and attention be constantly used, in overlooking a collection (so perishable as insects are in a warm climate), they are liable to be destroyed. Now, if these were copied by means of the camera, which would be but the affair of a few minutes, and a trifling expense, we should then possess forms and markings which no labour of the engraver's tool could supply, even if time alone did not at once offer an insurmountable difficulty. Forms obtained in perfection and in high relief, in fact, the insects, as seen in the accompanying proofs, seem literally to stand out from the flat surface of the paper: minute markings are clearly defined, and although we lose colour, yet there is an approximation to it in many instances which is very remarkable. I may call attention to the Atlas and Strix major, and also to the singular appearance of the green under the wings of Pontia Rapæ, P. Napi and P. Daplidice; in fact, the insects seem to possess in the plate a faint tinge of green. But this art is more particularly serviceable when we wish to illustrate the difficult forms we often meet with among the Coleoptera. Here it is of the highest value, for whatever the eye can see, Photography will unerringly pourtray, and when once we have a perfect drawing, with its lights, shades and half tones, the engraver (should his assistance be required) will find his labours materially lessened, and a very large amount of time saved.

"Again, to illustrate its easy applicability, I may mention that the accompanying drawings, with the exception of the one of the Ornithoptera, were prepared to be exhibited at the late Meeting of the East Kent Natural History Society, which was held on Tuesday, the 24th of November. I prepared my plates on Saturday, the 21st, and printed and toned them on the following Monday; therefore in the short space of two days a series of drawings was finished which no art of the engraver can approach, either for fidelity or beauty. Even this did not occupy two days; the plates and prints were only taken whilst the light was good. But to still more clearly illustrate the advantage and rapidity of this method of copying specimens, I may mention that Mr. W. W. Saunders kindly attended the late Meeting of our Society in Canterbury, and communicated a paper on the Ornithoptera: the next morning he drove over to see me. At half-past ten I took two plates of his beautiful box of Ornithoptera, a copy of which is forwarded; at a quarter past eleven he was obliged to leave to meet the train, on his return home: thus in this short space of time we were enabled to obtain a photographic picture of a most beautiful and rare box of butterflies, and also to retain for our Society a happy reminiscence of a most agreeable evening passed with one of the late Presidents of the Entomological Society.

"I now hope that sufficient has been said to point out how useful the photographic art may be in connection with the study of several branches of Natural History, and more particularly with that of Entomology.

"The following apparatus is what I have used. Mr. Thomas Ross's new triplet lens, well stopped down; it covers a plate of ten inches by eight. The camera is by Burfield and Rouch, expanding and lined with black cotton velvet. The bromo-collodion is by Mr. Linford, of Canterbury. This collodion works quickly, is very clean, and is remarkably strong and tough. My developer is made as follows:—

Sulphate of iron	2	drams	
Nitrate of potash	2	„	1 scruple.
Acetic acid	2½	„	
Spirit of wine	5	„	
Distilled water	10	ounces.	

I clean the plates with a solution of cyanide of potassium, the usual form.

"*Method of arranging the Object.*—As a rule all light-coloured insects ought to be set on a dead black paper, dark insects on a white one. Insects ought to be arranged if possible in some measure according to colour and texture, thus·

"*First*, colour. Black velvety wings are good absorbers, but bad reflectors of light, therefore they will require about five times the length of exposure to that of a white wing. Yellow colours are most difficult to take; they require a great deal of forcing, even more than the black: I am not yet in a position to give any accurate time, as the yellows vary from the pale lemon to the deep orange; but, as a rule, I should expose two minutes longer than the black; thus, if in a box of insects black, white and yellows are mixed up, it is extremely difficult to obtain a satisfactory result, as may be seen in No. 1 plate, containing the swallow-tail, the Bath white and orange-tip. The swallow-tail is not brought out, whilst the whites and greens are perfect; the orange is blackish.

"*Secondly*, texture. The wings of the Coleoptera are mostly glazed, therefore good reflectors. These insects take admirably, as in plate 7; all their salient points come out remarkably well, and stand sharp and clear. In these insects form is everything, and colour next to nothing; so that by Photography we are enabled to trace the most minute variations, if the insects be correctly focussed. The clear-winged insects are also beautifully brought out by this Art,—the Neuroptera especially,—but care must be taken to have a back-ground suitable for throwing up the exquisitely delicate tracery of the wings; the Orthoptera also come out well. Specimens of these two insects are seen in plate 7.

"*Size of Specimens.*—This is a very important consideration. If we wish to exhibit a single specimen, it ought to be taken as near the full size as possible, but where a series is to be photographed the expense must be kept down by diminishing the size (as seen in plate 5), for here we have a specimen of the largest moth known, which would have occupied more space than the whole plate, yet brought out so clearly and forcibly in the reduced size as to be in every way satisfactory, for I think so long as we can have all the markings well developed, it is not of much consequence that the actual size should be adhered to.

"In conclusion I beg to state that I shall be happy to answer any communications forwarded to me on this subject."

The President read the following note:—

On the Nest of Trigona carbonaria.

"At the November Meeting of this Society I exhibited a nest of Trigona carbonaria, a stingless honey bee, from Queensland, Eastern Australia. I have had opportunities since that time of more carefully inspecting the structure of the nest, and I think the results may be sufficiently interesting to lay before the Meeting. On cutting away a portion of the back of the box in which the nest was built I at once obtained a view of the interior. The spaces between the combs, and also every hole and crevice, was crammed with the bodies of dead bees; I obtained from four to five hundred, all of which I carefully examined in the hope of finding a female. All appeared to be ordinary working bees; I could not detect any difference among them. The combs in the nest of Trigona carbonaria are arranged precisely similar to those of the common wasp, that is, they are single, placed horizontally, and attached, or rather kept apart from each other, by short columns or foot-stalks; the mouths of the cells are, as in the nest of the wasp, downwards. The cells were entirely filled with brood; I could find very few not occupied. None of them contained honey; all the honey collected I concluded is always stored in honey-pots at the foot of the nest.

"In one particular the nest of Trigona differs materially from that of the wasp in the mode of its construction: the combs are built over each other, the lower comb being first constructed, so that it increases in size upwards, that of the wasp being enlarged downwards. Thus it will be seen at once that the arrangements of the hive of Trigona are very different to those of the hive bee. In the latter case the combs consist of a double series of cells, and are suspended vertically, and on the receptacles proper of the honey itself as well as of the brood. I am, however, inclined to the opinion that the hive of Trigona contains several prolific females; the accounts given of the multitudes inhabiting some nests is too great I think to render it possible that one female could produce them all. Mr. Stretch described a hive that he saw occupying the interior of a decaying tree that measured six feet in length, and the multitude of bees he compared to a black cloud. That there is more than one female in the hive of Trigona is, I think, rendered almost certain, from the fact of M. Guérin having found six in a nest of Melipona fulvipes, a genus very closely allied to Trigona.

"In Mr. Gosse's 'Naturalist's Sojourn in Jamaica' is a very interesting account of a nest of a species of Trigona. It is extracted from the journal of his friend Mr. Hill, who writes as follows:—'The wax of these bees is very unctuous and dark-coloured, but susceptible of being whitened by bleaching. The honey is stored in clusters of cups, about the size of pigeon's eggs, at the bottom of the hive, and always from the brood-cells. The brood-cells are hexagonal,—they are not deep, and the young ones, when ready to burst their cerement, just fill the whole cavity. The mother bee is lighter in colour than the other bees, and elongated at the abdomen to double their length.'

"The wax of which the nest of Trigona carbonaria is constructed differs in quality materially from that of the hive bee. Mr. Woodbury, who obtained the nest from Australia, had tested it in some degree, and scarcely considered it to be properly wax, taking that of the hive bee as the standard of quality. On holding it in a flame it does not melt as bees'-wax does, but ignites and burns with a red flame. If analysed it would probably prove to be composed principally of resinous gum."

During the Meeting the Secretary received from Charles Williams, Esq., Resident Surgeon of the Norfolk and Norwich Hospital, a living female specimen of the common wasp, which had on the previous day (December 6th) flown into Mr. Williams' bedroom.

The following was communicated by Mr. C. A. Wilson, of Adelaide:—

Notes on the South-Australian Calosoma Curtisii.

"The genus Calosoma being a remarkable one in a favourite family, I have thought that a few notes, from personal observation, on the economy of our only known species would be interesting. (There is said to be another species of Calosoma native of our province, smaller and of a black colour, but I cannot hear of any one who either has found or possesses it.) C. Curtisii was first found about five years after the establishment of this colony. In the month of November, 1841, they were brought singly into town from the North (as a few miles north of Adelaide was then called), being picked up by carters as 'something curious.' I was asked to name the insect (being, I believe, then the only entomologist in the colony), and found it a Calosoma. The following year a few more were found, and three or four were also said to have flown into one of the shops in Adelaide at night, attracted by the oil lights.

"After this came a lull for a few years, during which this much-prized beetle was rarely seen; but in 1851 several were again observed, and in the following year they immensely increased, and appeared to reach in numbers their culminating point, for in 1853 and since they seemed gradually to decrease again. Last year (1862) they were rather more numerous than usual, and about two dozen were taken altogether, in the same spots as those of previous years. Their time of appearance is almost always through the month of November, and so strictly is this the case that they are never looked for and seldom seen even a few days before or after that month. On one occasion, however, I found a solitary one a few days before Christmas.

"The habitat of these beetles has been hitherto exceedingly local, first a few miles north of Adelaide, and since almost confined to the foot of the North Adelaide hills; thence spreading to the park lands between them and South Adelaide, and occasionally to adjacent outskirts of the town. I hardly ever heard of their being found anywhere else, though on one occasion I took one myself thirty-two miles north, or six beyond Gawler Town, in a garden. My idea is that once found in North Adelaide and neighbourhood, they were retained there by the quantity of cow-dung scattered about, under the drying pieces of which they frequently hide. In the above places they kept almost exclusively to the foot-paths, and were thus at once perceived: there they were seen often crossing briskly enough, but not so swiftly as to prevent their being easily taken. Occasionally I have perceived one at a distance, standing motionless in the middle of a path, the sunlight playing brilliantly on his polished elytra, and not moving till I was close upon him. They are continually trodden under-foot, being considered from their aspect 'venomous'! They evidently avoid the grassy spots, and come out into 'the clearings,' as the weeds and grass seem to incommode them and prevent their walking. I have never in a single instance known them attempt to fly, nor ever observed them on the wing, though they have ample organs for that purpose.

"These beetles are fond of all damp situations, but still do not like rainy weather, which seems to clog them; and again the hot weather of December I think but few of them could stand, so the term of their full-fledged existence is but of short duration. Their food, I think, must be the different kinds of caterpillars about in October and November, and occasionally those naked ones (of the Noctuidæ) found under cow-dung, where I have sometimes observed the beetle. They often exude too, when caught, a brown liquid from their mouths, smelling strongly of stercorarious matters.

"The larva I have enclosed is one of the larger ones I have taken, shrunk, of course, a little in size: it was probably full grown. I never found any of these larvæ till the year 1852, when the greatest number of the imagos were taken; all were found at the same places as the beetles, at the same time, and nearly all of their full size. These facts are singular, and seem to prove that these insects remain in either the larva or pupa state several years, and then are all perfected at the end of so many years at the same time. I have seen the perfect beetle and full-grown larva together under cow-dung, and on the surface of the ground. The length of the pupa-condition (whose place of rest is, I suppose, beneath the surface of the ground) I know not yet. There has lately been a rumour of these Carabidæ being found in the far north (from three to six hundred miles inland), but this has not been authenticated.

"The following notes are copied, almost *verbatim*, from those I made at the time in my entomological note-book:—

"*Calosoma Curtisii.*—Nov. 1, 1852. The first of the season taken and brought to me; smallest had yet; very bright green; found below N. Adelaide hills.

"Nov. 2. Found self another Calosoma in foot-path between N. and S. Adelaide, in Square near the Church; also small; running quickly.

"Nov. 3. Found three more Calosomas, foot of N. Adelaide hills, 4 P.M.; running across paths. (Caterpillars of Plusia abundant).

"Nov. 5. Five Calosomas; two in morning; three in afternoon; morning at same place—ford or crossing place.

"Nov. 6. Four more Calosomas; always found at foot, never top of hills; always in paths with grass at sides; all those found last few days full-sized.

"Nov. 8. Four more Calosomas; same places.

"Nov. 9. Five more, one of these for first time *in* grass, and not very near path.

"Nov. 10. Extraordinary day for Calosomas; found altogether twenty-four in compass of half a mile.

"Nov. 11, 12 and 13. Respectively four, two and one of these beetles.

"Nov. 15. Two Calosomas; one a female burrowing in ground, as if to lay.

"Nov. 16. Four more Calosomas, under cow-dung in park lands N. Adelaide; two under one piece, also two large larvæ; first I have seen; probably larvæ of these beetles; very active indeed, jumping about when touched; exuded a dull white matter. Colour dull black with red bands. (Figure here drawn). In evening of same day one Calosoma flew into room.

"Nov. 17. Another Calosoma-larva under cow-dung.

"Nov. 19. Saw the curious larva of the Calosoma crossing the road quickly, nearly as quickly as the beetle itself, in same spot as before—*i. e.* near ford.

"Nov. 20. Another larva, same kind, crossing the road."

Paper read.

Mr. M'Lachlan read a paper "On the Types of Phryganidæ described by Fabricius from the Banksian Collection." In this paper the Limnephilus intercisus of Walker was identified with the Phrygania irrorata, *Fabr.*, and the Dipseudopsis capensis of Walker with the Phryganea notata, *Fabr.*, it being conceived that Fabricius was in error in stating that the latter was from North America; and the third type-species, P. signata, *Fabr.*, was referred to the genus Brachycentrus of Curtis, possibly B. incanus of Hagen.—*J. W. D.*

Note on Miarus.—I think it must be this time three years since Douglas first showed me how to find the little Miarus on Blackheath, in the Campanula there. The hare-bell growing here is nearly two feet high, and has eight or nine flowers on a stem. The Miarus attached to the plant is rather larger than M. Campanulæ, but not so big as M. Graminis. Nearly every flower has its tenant. It is a great treat to meet thus with an old friend, and finding, as I did, Apoderus in the same bank, the hunt along the old city walls was a great success.—*George Lewis; Kiu-Kiang, September* 28, 1863.

Enormous gathering of Drypta.—Towards the end of December last, heavy floods occupied some acres of the low ground extending along the river here. While out shooting in a sanpan, I happened to come to a little island, as it were, made of loose earth and clay, about 20 feet in diameter. This was literally riddled, pierced through and through, by one vast colony of Drypta: some dozens laid huddled together in every crevice. The insect is red, with the margins of elytra and suture blue. I bottled nearly a hundred specimens, so that those cabinets which require the species can easily be provided. Three or four species of Steni and two of Clivina occupied the same spot.—*George Lewis; Foo Chow, April*, 1863.

Hylastes angustatus taken in England.—

HYLASTES ANGUSTATUS (*Herbst. Kaf.* v. iii. 9, tab. 48, f. 9, h; Bostricus angustatus, *var.* nigra), *Erichson, Weigmann's Archiv.* 1836, Bd. i. 51, 8; *Redt. Faun. Austr.* 825 (*nec Gyll.*).

The name of this species is included in Mr. Crotch's recently-published 'Catalogue of British Coleoptera,' but it is somewhat doubtful whether it may not be therein intended to represent H. palliatus, as the latter (though certainly British, and indeed a common insect) is omitted from the work in question; and this supposition is by no means improbable, since there is some confusion in the nomenclature of certain members of the genus. I have, however, determined H. angustatus from a specimen taken by myself at Holme Bush, and have no doubt that it is mixed with H. opacus in collections. It differs from the latter in the following points: it is narrower and more elongate; the punctuation of the thorax is rather coarser, the small spaces between the punctures being shining, instead of dull; the tibiæ are a little more dilated, differing also slightly in the spines on their outer edge, and the rostrum exhibits a delicate but decided longitudinal channel, the rostrum in H. opacus being without any groove. H. palliatus, which also has the rostrum grooved, is a larger, stouter and broader insect, generally brownish in colour instead of black, with the elytra more deeply and roughly punctured, and the thorax decidedly constricted in front, and with an elevated middle longitudinal line. It differs from both H. opacus and H. angustatus in having the third joint of the tarsi more decidedly bilobed, and Redtenbacher (*loc. cit.*) places it in a section apart from both these species, on account of its mesosternum being armed, between the middle trochanters, with a small blunt tubercle, which is turned forwards. —*E. C. Rye*; 284, *King's Road, Chelsea, S.W.*

Capture of Coleoptera on Penmaen Mawr.—At Zool. 8793 Dr. Power has kindly given notice of the occurrence of Quedius auricomus and Stenus Guynemeri in North Devon. Having myself captured both insects during a visit to North Wales, in July last, it may be interesting to some of the readers of the 'Zoologist' to know where they were found. As my friend Mr. Garneys had obtained, in the early part of the same month, a few specimens of the former on Penmaen Mawr, I was led to make special search for it in various localities, and the following furnished me with a tolerable supply of both, *viz.*, Aber, Penmaen Mawr and Penmaen Bach, Dwggyfylchi and Falls of Dolgwrog. Mr. Garneys was fortunate in meeting with a fine specimen of Euryporus picipes on Penmaen Mawr.—*Arthur Hewgill; Repton, October* 26, 1863.

TO CORRESPONDENTS.

The time for prepayment is prolonged for ten days, *viz.* until the 10th of January, after which date prepayments must cease, or must be Fourteen Shillings, instead of Twelve Shillings.

I cannot express regret that the amount of contributions in hand has increased instead of diminished during December, although I am fully aware how annoying it is to have publication delayed. This plethora of matter shows the healthy state of the 'Zoologist,' but it is a subject to which I only allude apologetically, and not boastingly: the cuckoo-cry of "press of matter" implies starvation, and all journals that reiterate the cry die of atrophy: like the song of the moribund swan, it is a funeral dirge. It is therefore with peculiar reluctance that I mention this overflow, and I would not think of doing so unless to apologise for delay. I have a scheme for relieving the 'Zoologist' of some portion of its contents; but this is still in embryo. Some years back I used to give an annual summary of the progress of Zoology in this country: this summary took the form of a Preface, and was, I believe, generally acceptable. Want of space necessitated its abandonment. I think that a 'Zoologist' Year-Book might be brought out in May, which should comprise a succinct account of all the most interesting zoological facts noticed in every journal during the preceding year, mentioning every new Suckler, Bird, Reptile, Fish, Insect or Book that had made its appearance in Britain; and, in the case of books, giving the number of pages and plates, the table of contents, and the price; in the case of animals, a short description of each novelty would be desirable. The price remains to be considered, but I think three shillings and sixpence would meet the cost. This would relieve the pages of the 'Zoologist,' and allow of time for amplifying those brief notices which require immediate publication, as no fact should ever be withheld from the public longer than was absolutely inevitable. I found during the career of the 'Entomological Magazine' that every subscriber complained of the quarterly intervals, information, when at last it arrived, being no longer "news." This will always be fatal to quarterly records of natural-history events.

The following communications stand over on the 24th December:—

BIRDS.—Philip Crowley, Henry J. Wharton, Capt. Hadfield, Thomas Goatley, Alfred Newton, James Cooper, T. H. Allis, Charles H. Wharton, Rev. A. Matthews, William Bennett (Emeus breeding again), C. S. Maurice.

REPTILES.—Crocodiles, by C. A. Smith; Lizard Snakes, by Arthur Adams; Frogs climbing trees, by Henry Reeks and Charles Adcock.

FISHES.—Food and Parasites of Salmon.

MOLLUSKS.—Boring Snails, Hidden Shells and their Tracks.

INSECTS.—Thomas Alcock, Edwin Birchall, E. C. Rye, Charles G. Barrett, John R. S. Clifford, S. P. Saville, Rev. E. Horton, W. H. Hammond, John Peers, J. B. Hodgkinson, J. A. Turner, M.P., W. Kendrick, Robert W. Leven, N. C. Tuely.

The questions, "What becomes of old robins?" and "Why do the young robins kill the old ones?" have been discussed at large in other periodicals, and an incredible number of communications have reached me for publication in the 'Zoologist.' I could wish, before the questions are discussed at greater length, that some competent ornithologist would show, *first*, that old robins disappear any more than old sparrows, old crows or any other old birds; and, *secondly*, that the young ones do kill the old ones; these matters being proven, we shall be in a position to discuss the questions that arise out of phenomena so interesting. I have no evidence of either of these assumed facts.

EDWARD NEWMAN.

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